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ABSTRACT

Many 16-year-olds in England seek alternatives to traditional formal higher education, thus requiring colleges to offer alternative means of attracting this group to continue their education in an educational atmosphere appropriate to their needs. This publication examines the problem of providing for non-advanced further education (NAFE) in the context of the expansion of an existing college. It considers the uncertainties of further educational requirements which, coupled with the constraints on building programs, indicate a pattern of growth in three discrete phases. Further, it provides details on the kinds of courses to be expected at the college and the accommodation which will be required. Finally, alternative approaches to the development plan are discussed and illustrated in relation to this overall strategy. Appendices include descriptions of two college non-advanced further education expansions; and calculation tables for teaching and non-teaching area capacities in existing buildings, and area allocations for 800 full-time equivalent students at the end of a phase 1 expansion. (GR)

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Accommodation for the 16-19 age group:

NAFE: DESIGNING FOR CHANGE

Department of Education and Science
Architects & Building Branch

FOREWORD

In recent years non-advanced further education has been seen by many 16 year olds as an increasingly attractive alternative to the school sixth form. For the less able students in many areas it may represent the only practicable way of remaining in full time education beyond school leaving age. If such students are to be attracted to continue their education it is necessary that not only should the courses offered appear relevant to their future working life but that the college itself should possess a character appropriate to their needs.

This note looks at the problem of providing for non-advanced further education in the context of the expansion of an existing college. It considers the uncertainties of future educational requirements which, coupled with the constraints on building programmes, indicate a pattern of growth in discrete phases. An overall strategy for the development of the college is described which sets the context for the consideration of both the growth in numbers and the expansion of the accommodation. Finally alternative approaches to the development plan are discussed and illustrated in relation to this overall strategy.

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INTRODUCTION

1. In recent years an increasing proportion of the resources made available in the further education building programme has been directed towards the non-advanced further education (NAFE) sector. This change of emphasis arises from a growing concern for the needs of young people leaving school at 16, a group whose abilities and aspirations vary widely. At one end of the range are those of comparatively high academic ability whose intention may be to progress through NAFE colleges into higher education or industry; at the other end is a heterogeneous group with few academic achievements, often disenchanted with school and with no career aspirations. Most education authorities now recognise the need to provide courses to attract these less able students (especially at a time of high youth unemployment), and growth in these courses has given rise to new demands upon the available accommodation. Whilst the size of future building programmes remains uncertain, it is likely that some emphasis will continue to be placed on NAFE provision. The Department of Education and Science has previously published some general conclusions about the design of accommodation for further education[1], but this is not specifically related to NAFE. The purpose of this publication is to describe the process of formulating a strategy for the development of a NAFE college. It deals in some detail with the kinds of courses to be expected at the college and the accommodation which will therefore be required in such colleges.

2. In April 1978 the London Borough of Enfield invited the Architects and Building Branch in the Department of Education and Science to collaborate with their education and their architects' departments in the development and design of a strategy for the expansion of Edmonton College of Further Education. Careful consideration had already been given by the Authority to the overall pattern of post-16 education in the Borough, and it had been decided that the sixth forms in all the 11-18 schools would remain viable even while pupil numbers fell. The Authority therefore hoped to expand Edmonton College to provide for a range of courses at craft and sub-craft level to meet in particular the needs of the many school leavers who were receiving no further formal education after the age of 16. Since the demand for such courses, most of which would have to be developed specially, was clearly difficult to predict, flexibility was to be a keynote of the design.

3. A & B Branch agreed to take part in this project as it had for some time wished to examine the accommodation needs of a NAFE college with this range of work which also had links with both the youth and adult education services. It was also hoped to gain experience of designing new buildings in discrete phases and the adaptation of those already existing.

4. In many ways the problems of NAFE at present are typical of those encountered by all sectors of education – numbers in the age-group will soon be declining (quite steeply in some areas), and there are uncertainties about future economic and social trends as well as the possibility of changes in central and local government policies to be considered. Job opportunities in an area are not likely to remain constant and young people may alter their views of the value of the courses offered. All these factors taken together point to the need, now more than ever, to adopt a 'loose fit' approach to the consideration of any development strategy.

NON–ADVANCED FURTHER EDUCATION: The National Scene

5. Non-advanced further education (NAFE) is defined as the full and part-time provision in colleges of further education of courses of general and vocational education up to the standard of GCE 'A' level and its equivalents. The courses provided may be categorised as follows:–

i. GCE 'O' AND 'A' LEVEL COURSES. These are offered on both a full and part-time basis and generally involve one or two years' study. GCE 'O' and 'A' level subjects are frequent ingredients of what might be described as "mixed

[1] Design Note 9, Designing for Further Education (DES, 1972)

economy" curricula. There are numerous variations on the "mixed economy" theme. One example is the study of GCE 'O' and/or 'A' level subjects concurrently with a course of study leading to an Ordinary National Diploma.

ii. TECHNICIAN LEVEL COURSES. These courses cater for people working or intending to work in the fields of science, engineering, construction, catering, business studies etc. In the past students were prepared for OND, ONC or City and Guilds of London Institute examinations, but these are now being progressively replaced by the awards of the Technician and Business Councils (TEC and BEC). Programmes for the latter awards normally involve 2 years' full-time or sandwich study for diploma level and 2 years' part-time study for certificate level.

iii. CRAFT AND OPERATIVE COURSES. These courses prepare students for the examinations of the City and Guilds of London Institute for the Regional Examining Boards. They involve varying periods of study and allow for different modes of attendance. Most of them are strongly vocational and the majority of students are part-time.

iv. FOUNDATION AND PRE–VOCATIONAL COURSES. The City and Guilds of London Institute, Regional Examining Bodies and the Royal Society of Arts offer certificates to students who successfully complete a period of pre-vocational study prior to entering jobs such as nursing or secretarial work. Foundation courses for students without vocational commitment are also offered. Some colleges also devise their own certificate and diploma courses to meet special needs not already catered for by other examining bodies.

v. PROFESSIONAL COURSES. These courses lead to the examinations of professional bodies such as the Institute of Bankers or the Institute of Marketing.

6. The post-war years have seen a rapid growth in enrolments on NAFE courses, and over the last decade there has been a steady increase in the number of students continuing in full-time education beyond the statutory minimum school-leaving age. In 1978/79 27.8% of all 16-18 year olds in England and Wales were in full-time education – 17.6% (368,000) in schools and 10.1% (212,000) in NAFE. The total part-time NAFE enrolment in the age group was 13.8% (288,000). Over the next decade, however, the annual number of 16-year olds will drop on average by over 30% and this is likely to have a marked effect on demand for full-time courses even if the participation rate continues to rise, though the Government's current expenditure plans (Cmnd 7841) forecast increased enrolments during the planning period.

7. Recently it has become increasingly clear that there are several categories of potential students whose needs are not being met. These include school-leavers who do not possess the basic qualifications required for entry to most FE courses; unemployed young people and adults who could benefit from suitable courses of basic education; ethnic minority groups, especially those whose cultural background or religious beliefs impede their participation in normal courses of education in this country, and young people who enter jobs where little or no systematic training or further education is provided. For those school leavers not possessing the basic qualifications for entry to FE courses 4 main types of course have been developed. These are foundation courses; certificate of extended education courses; certificate of office studies courses and other courses in the fields of business and commerce; and a variety of college devised courses, some of which lead to nationally recognised qualifications. For unemployed young people the Youth Opportunities Programme (YOP) and a wide range of college devised basic education courses (literacy, oracy, numeracy and social skills) are becoming increasingly available. The Training Services Department sponsored training opportunities scheme (TOPS) provides an opportunity for adults to retrain and many of these courses are provided in FE colleges. Remedial education under TOPS is provided mainly by preparatory courses which include courses of English language training for

members of ethnic minority groups. The joint DES/MSC programme of pilot schemes of unified vocational preparation provide training for some young people who would otherwise receive none. Some of these schemes are provided by FE colleges. It is in this area of provision for the under achiever and the less able that there is the greatest scope for the development of new courses. This need has been recognised by the FE Curriculum Review and Development Unit who are actively engaged in this area of work.

THE LONDON BOROUGH OF ENFIELD

8. A description of the Borough is contained in Appendix 1. This includes a synopsis of population trends, the distribution of socio-economic groups and employment opportunities. It also identifies 3 groups as having particular educational requirements, namely immigrants, the handicapped and the unemployed. A summary of the existing educational provision in the Borough is included together with an assessment of future demand both from the 16-18 age group and for adult education. The proportion of students entering full-time further education is unusually low. One reason for this is the limited accommodation at present available for NAFE courses. If a wider range of courses and more suitable accommodation were provided, it is believed that participation rates would rise and help to offset the future decline in the 16-18 year old population. The majority of non-participants are concentrated in the east of the Borough within the catchment area of Edmonton College.

EDMONTON COLLEGE BEFORE EXPANSION

Courses at the College

9. A brief history of the college together with the range of courses it was offering in 1978-79 is given in Appendix 2. Available courses fall into 4 main categories: Commerce, General Education, Social Work and Engineering. As the college expands the initial need will be to develop further courses in these categories, aimed primarily at attracting non-participants without formal entry qualifications. In addition courses will be required for groups with special needs (see paragraph 8). The provision of all the types of course indicated will require a considerable degree of flexibility in their organisation and management: it will also necessitate the provision of buildings which are not designated or equipped with a restricted and immutable range of subjects or teaching techniques in view.

College Buildings

10. At present the college is housed almost entirely in the permanent and temporary buildings at Montagu Road. It also has the use of 3 rooms and the office at Raynham School approximately 1½ miles away. The site has an area of 3.7 hectares and the college buildings are grouped along its southern edge (see Figure 1).

11. There are 2 main permanent buildings (blocks 1 and 2, Figure 1, and Figure 2). Block 1 is a 3-storey building with teaching spaces, offices and storage on 3 main floors and storage and offices on 2 mezzanine floors. Block 2 is a single-storey building containing teaching rooms, the library and a gymnasium. The buildings are structurally sound but need a considerable amount of repair and maintenance work: repainting inside and out, some replacement of joinery, repairs to floors and external brickwork and the complete replacement of guttering. In the near future it may also be necessary to re-nail the slated roofs, replace leadwork and replace the existing mechanical and electrical services.

12. The refectory (block 9), fabrication and welding shop (block 8) light engineering (HORSA – block 7) and an engineering shop (block 6) are all temporary buildings. Block 3 consists of 7 temporary classrooms brought on to the site in 1971.

Present disposition of accommodation

13. Many of the practical and specialist rooms have been converted from former general teaching classrooms and are rather poorly furnished and serviced. Art is taught in a general teaching room which has a sink; the

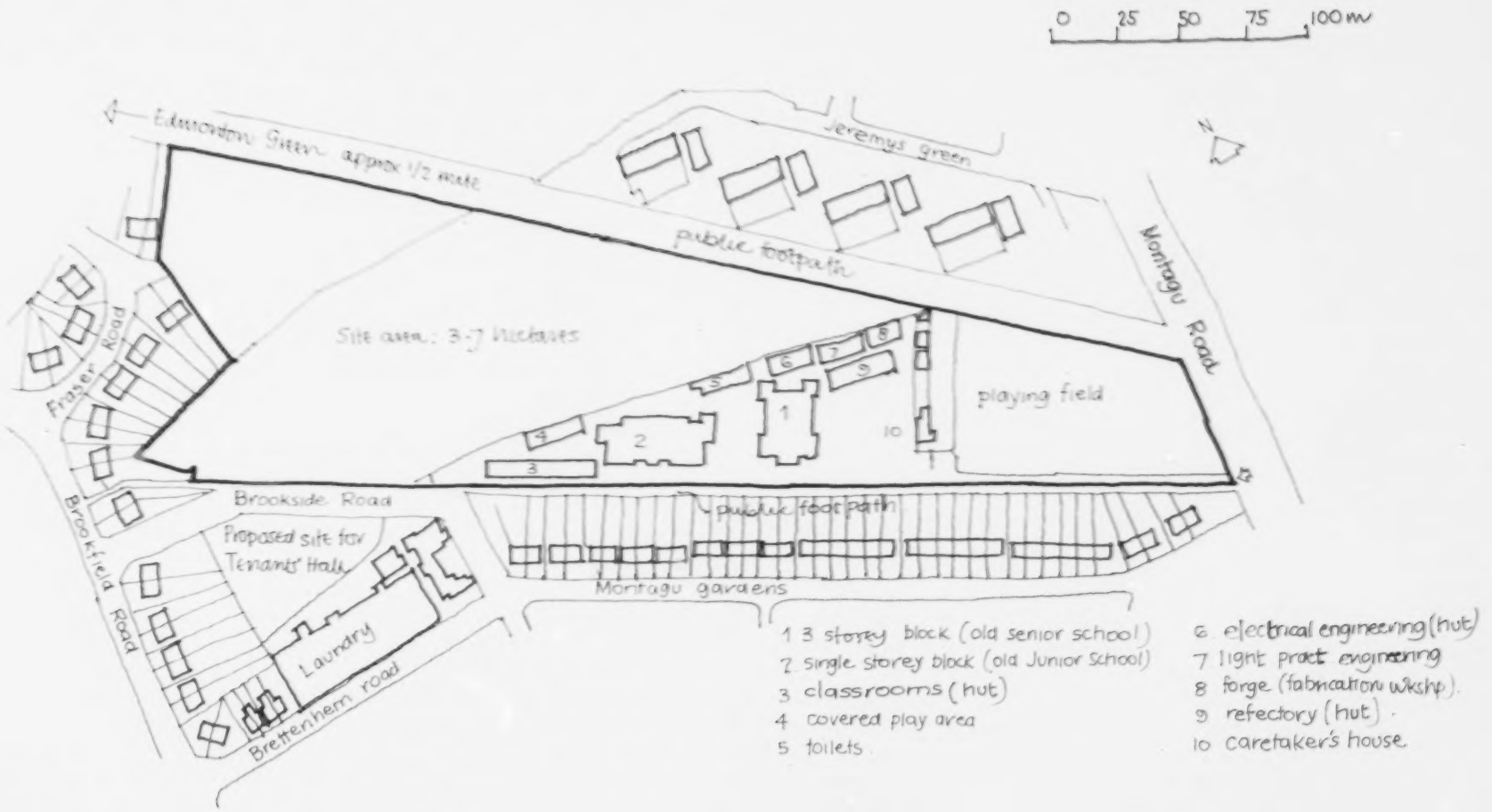


Fig. 1. SITE PLAN AS EXISTING

laboratories have old fixed benches and insufficient preparation space; and the workshops, though well laid out, suffer from lack of space and not having been purpose-built. There are no changing or showering facilities associated with the gymnasium. The refectory is in a temporary building which does not permit the creation of an appropriate social atmosphere. Staff offices and storage rooms are scattered in spaces which were too small for anything else. Inevitably, there are circulation problems. Calculations for assessing the capacity of the existing buildings are discussed in paragraphs 27 and 28.

THE INVESTIGATION

14. In order to familiarize themselves with the accommodation needs of the 16-19 age range generally, a small team from Architects and Building Branch visited some 35 institutions in different parts of the country involved in the education of young people over school leaving age, and held discussions with 10 LEAs about the problems involved. Among the institutions visited were 10 non-advanced further education colleges and 5 tertiary colleges. From these visits the team identified a number of problems common to many FE colleges; these are summarised below.

The Problem of Growth in Phases

15. Several colleges were seen that had been designed for growth in substantial interdependent phases. However, this design strategy had proved to be unsatisfactory when, for various reasons, the full extent of the anticipated expansion did not take place. In these cases colleges had been left in an incomplete state, with accommodation wildly out of balance – in one example the first phase contained virtually all specialist teaching accommodation in the expectation that general teaching spaces would follow in phase 2 which had in fact not been built. In many institutions the range of specialist teaching rooms and the balance between specialist and general teaching rooms was inappropriate to the range of courses currently on offer. In addition it sometimes happened that the balance between teaching and non-teaching areas had become distorted during the growth of the college. This was particularly noticeable in the widespread shortage of private study areas and of social accommodation for students.

Room Size Distribution

16. The room size distribution at many of the colleges produced an unsatisfactory match between the range of group sizes and the spaces available to teach them in. Such mismatch causes problems in timetabling and can lower the effective utilisation of the accommodation (in general, there were insufficient small rooms). The problem reflects, at least in part, the unsuitability of many buildings for subsequent adaptation to meet the changing demands of curricula and teaching methods.

Vandalism

17. Many colleges suffered wilful damage to their sites, parts of the building fabric and furniture. Damage ranged from nervous picking of upholstery and cigarette burns on carpets to the deliberate destruction of vulnerable building components. Almost without exception lockers in corridors and cloakrooms had become unusable after a relatively short time.

STRATEGY FOR COLLEGE DEVELOPMENT

Method of Work

18. Following Enfield's approach to the Department a series of joint visits was arranged to institutions selected as being of particular relevance to the Edmonton College project. This exercise was valuable not only for the information that was gathered but also in establishing a basis of common experience from which to consider the basic development strategy. A working group was then formed consisting of educationists and architects from Enfield and the Department. During its meetings the principles of the overall strategy were established. The working group meetings were supplemented by small informal meetings and discussions were also held with specialist advisers, Borough planners and engineers, and

The '3 Decker' from the main entrance adjacent to the Caretaker's House (Fig 1 Block 1).

The single-storey building (Fig 1. Block 2).

Fig. 2. THE EXISTING BUILDINGS

the staff of Edmonton College. As the work progressed various approaches to the development strategy were presented to the working group and comments received. A half-day presentation was also given to the staff of the college. The decisions relating to the formulation of the site development plan are described later, whilst the main principles that were broadly agreed as forming the basis of the development strategy are summarised in the following paragraphs.

The need for an integrated scheme

19. At each stage of growth the college should, as far as possible, both appear to be and be able to function as a well integrated whole. Too often in the past designers have located and planned the first and indeed subsequent phases of colleges so that options which could have been left open have been thoughtlessly closed. The result is a congested site, poor internal and external circulation, inflexibility and a less efficient use of site and buildings. What is wanted is not a 'grand design' which over the years is gradually completed, but a strategy. This must allow for growth and change. It must allow later designers to reorganise or add to the buildings to meet new needs.

The need for balanced accommodation

20. The balance of accommodation types between general and specialist teaching areas and between teaching and non-teaching areas should be maintained or corrected in each complete phase of growth, and as far as practicable at each smaller increment of subsequent phases.

Growth and change of use

21. The future need for teaching spaces cannot be predicted with any confidence as this will be closely related to changes in courses offered and to enrolment in them. These will change over the years as new courses are developed and others decline, whilst the demands of local industry may also change. Such unforeseeable changes can only be met by a flexible approach to the design of teaching accommodation, particularly in relation to its layout and servicing. The amount of non-teaching accommodation to be provided is directly related to the number of students, and thus its growth is more easily foreseen. If certain facilities (eg the library) are intended to remain centralised as the college expands, allowing for future expansion will pose a real problem in the design of the first phase.

Character

22. Edmonton College caters, amongst others, for students at the lower end of the ability range whose success at school, measured in terms of academic qualifications, may have been minimal. They may well have become disenchanted with school and their initial motivation to continue their education may not be high. Clearly the image of the expanding college as perceived by its potential clients will be a major factor in its attraction or otherwise to young people leaving school. In part this image will depend upon the character and appearance of the buildings and external areas and it is important that they provide a friendly and welcoming environment so as to strengthen the occupants' feelings of "wanting to be in".

Organisation

23. At the present time the college is organised on the basis of four sections: academic studies, commerce, engineering and adult studies. As the college expands it may be necessary to reorganise these academic units in order to expedite day to day running. Various modes of academic and resource organisation have been tried in FE colleges including the common departmental structure and other relatively new organisations which are claimed to help eliminate the barriers which often exist between departments. In terms of the efficient utilisation of teaching accommodation, studies undertaken by the Department of Education and Science[2] suggest that utilisation can be increased if teaching spaces, especially non-specialist rooms, are not seen as belonging to

[2]The result of this work is being published by DES in a series of A & B Papers

individual departments but are accepted as a generally available resource which may be centrally timetabled.

Disturbance and disruption

24. If, as seems likely, any expansion of the college beyond phase 1 will occur in small increments, the presence of building contractors on site may be a feature of college life for many years to come. This must form an important consideration in the development strategy if disturbance and disruption is to be minimised. External areas should be landscaped in such a way that they will not be disturbed by future building work.

Vandalism and security

25. Vandalism is as common in Edmonton as it is in many other areas and has been suffered by the college mostly outside normal working hours. It will be necessary in the design to strike a balance between the conflicting requirements of deterring vandals, yet attracting students.[3] The greatest practical deterrent to vandalism appears to be constant use of the buildings, and in this context a developing community involvement with the college would be valuable.

Community Involvement

26. The possibility of including some separately funded community provision as part of the phase 1 development will need to be considered; a specific example might be the provision of a meeting place for the local tenants' association, at present intended to be located on a site adjacent to the college (Figure 1). The shared use of certain facilities is likely to prove mutually advantageous, whilst the increase in the out-of-hours use of the site may well serve to deter vandalism. It is hoped that the character proposed for the college will go some way towards encouraging the development of a community spirit. A flexible approach to the development plan will allow further community provision to be incorporated into future phases of growth, as appropriate at the time.

GROWTH OF THE COLLEGE

Capacity of Existing Buildings

27. In formulating a development strategy for the expansion of any FE college, the assessment of its present capacity is an essential preliminary step. This capacity will be limited by the amount and type of available teaching accommodation and can conveniently be expressed in terms of Full-time Equivalent students (FTE)[4]. Having assessed this capacity the appropriate requirement for non-teaching areas can be calculated and compared with the existing non-teaching provision, in order to establish whether the accommodation is in balance in this respect.

28. The calculation of FTE capacity is carried out in 2 stages. Firstly, the total number of available work stations is calculated, this total being built up room by room by dividing the usable teaching area in each room by the area standard appropriate to the activity taking place in the room. The calculations for Edmonton CFE in its present buildings are shown in Appendix 3. The total number of work stations available is 500 (304 in permanent and 196 in temporary accommodation); 47% of the workstations are in general teaching accommodation, 35% are in specialist teaching accommodation and 18% are in workshops. The second stage is to translate the capacity measured in work stations into a notional FTE capacity. Clearly both the timetabling constraints and the peak induced by part-time attendance (employers tend not to encourage day-release on Mondays and Fridays) will mean that the FTE capacity will be lower than the number of work stations. Experience suggests that, depending on the type of college and the courses on offer, there need to be at least 25% more work stations than FTE students. Thus the notional capacity of

[3] See "Vandalism in Schools and Colleges: some possible ways of reducing damage" (DES and Welsh Office 1978).

[4] No of FTE students = No of full-time/sandwich students + 2/9 No of part-time day students + 1/3 No of block release students

Edmonton College with its present range of courses can be approximated to 400 FTE, which when compared with the 1978-79 enrolment of 550 FTE students (50 FTE accommodated off-site), gives a measure of the extent to which it is already overcrowded.

Future Growth at Edmonton CFE

29. The Authority perceives a very considerable pressure of demand for low-level FE courses in both Enfield and the surrounding areas which would comfortably sustain the college in its early stages of growth. Indeed, the Authority holds the opinion that a college of about 1600 FTE capacity would be needed to satisfy local needs. However, with the coming down-turn in numbers in the age-group there must remain some doubt as to the level of future demand. Furthermore the pattern of future demand in terms of course requirements may well develop in a different direction from that presently foreseen. This, coupled with uncertainty about size of future building programmes, implies at best a gradual expansion of the college. Neither the rate of growth nor the size of increments are predictable. A bid for an initial phase of building to increase the capacity of the college by some 400 FTE places (which did not find a place in the 1980-81 building programme) formed the basis for this joint study.

30. In order to formulate a design strategy for growth beyond phase 1 some assumptions need to be made. In the present economic climate it seems reasonable to suppose that any future increments of growth will be smaller than phase 1 (perhaps between 100 FTE and 300 FTE). While the proposed strategy allows for expansion in such smaller increments, these have been considered as making up two broad phases, each adding about 400 FTE to the overall capacity, in line with the pattern of expansion presently envisaged by the local authority.

Role of Existing Buildings

31. The role of the existing buildings will clearly be crucial to the consideration of a development strategy, particularly in the early stages of growth when they form a substantial proportion of the available accommodation. From the description of the 2 permanent buildings (paragraphs 11, 13) it is apparent that a case can be made for their replacement on the basis of their inappropriate 'board school' appearance and character, and their high maintenance, repair and running costs. However, in the context of the national stock of FE buildings they do not stand out as an extreme example and probably would not be given a high priority. They are therefore likely to remain a part of the college for some considerable time and the development strategy will need to take account of this.

32. The case for the replacement of the various temporary buildings can be more strongly stated: their appearance is uninviting, they restrict the use of the site and their running costs are excessive. Nevertheless at present they contribute a significant proportion of the total capacity of the college and their replacement will need to be gradually interlocked with future increments of growth. It would in any event be prudent to consider their retention for the time being until the numbers in the age group reach their peak.

33. The relationship of future demand, the use of existing buildings and the potential for expansion is summarised in Figure 3 which illustrates the way the college can grow or contract in the future.

EXPANSION OF THE ACCOMMODATION

34. Having established a framework for the growth of the college in terms of broad student numbers, the working group went on to consider the way the accommodation might best be extended and adapted to provide the required capacity at each stage of growth. In considering the initial phase of expansion it was possible to predict the way the increased numbers might be distributed amongst the main categories of course to be offered and hence calculate the accommodation requirements. Looking further ahead, it is not realistic to attempt a detailed assessment of the nature of the teaching area likely to be required, but rather to ensure that a balance of teaching and non-teaching area is maintained.

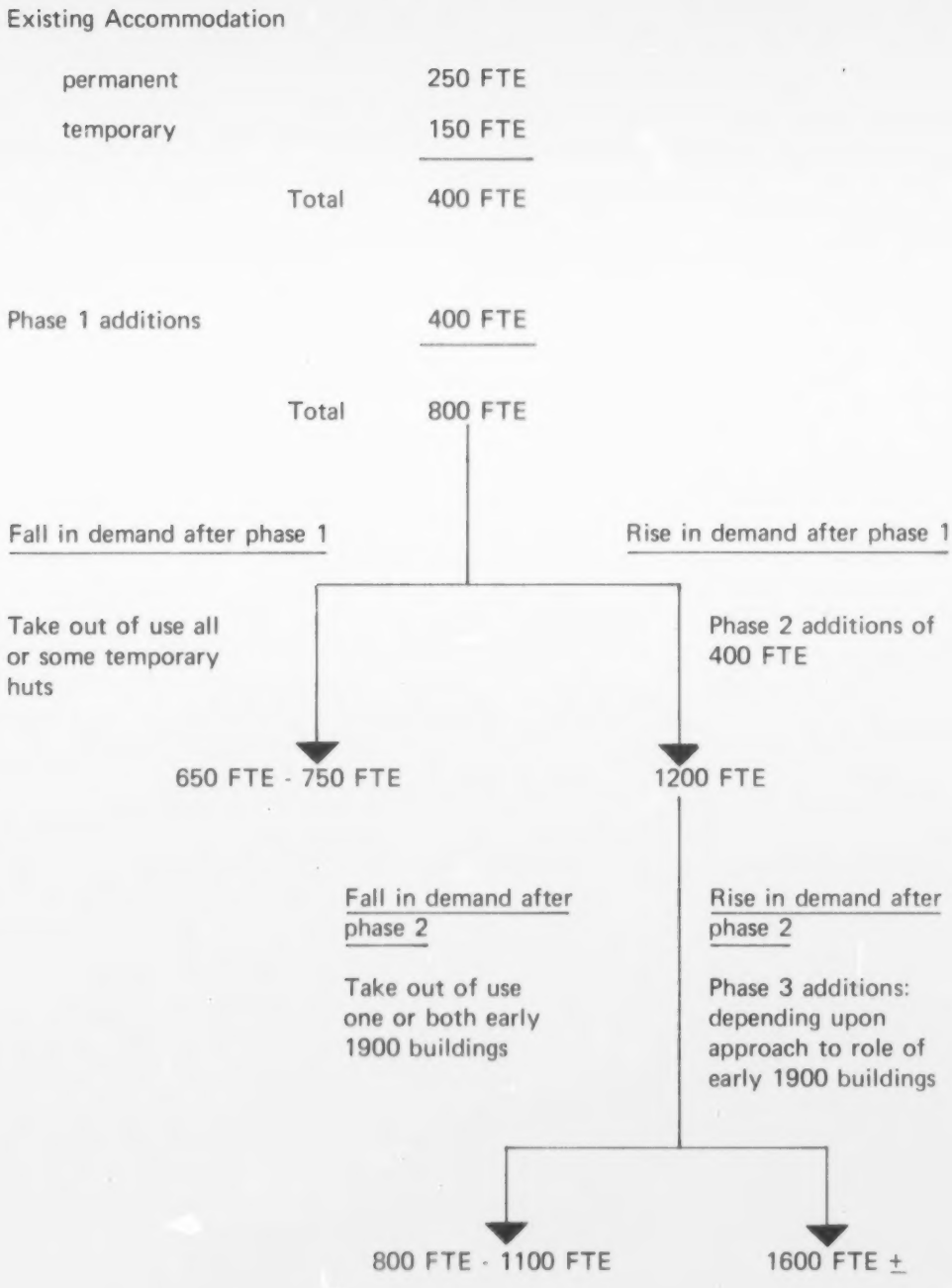

Existing Accommodation
permanent 250 FTE
temporary 150 FTE
Total 400 FTE
Phase 1 additions 400 FTE
Total 800 FTE
Fall in demand after phase 1
Rise in demand after phase 1
Take out of use all or some temporary huts
Phase 2 additions of 400 FTE
650 FTE - 750 FTE
1200 FTE
Fall in demand after phase 2
Take out of use one or both early 1900 buildings
Rise in demand after phase 2
Phase 3 additions: depending upon approach to role of early 1900 buildings
800 FTE - 1100 FTE
1600 FTE ±

Fig 3. EDMONTON COLLEGE: CAPACITY RELATED TO CHANGES IN DEMAND

Phase 1 : calculated area requirements

35. The teaching area requirements were calculated from projected enrolments grouped into the four main subject areas. These calculations also gave a measure of the appropriate subdivision of teaching area into general teaching and specialist accommodation related to specific subject areas. The character proposed for Edmonton College and the need to attract non-participants, gave added priority to the provision of a balanced range of non-teaching areas. Requirements were built up from the recommendations for individual categories of non-teaching accommodation related to student numbers as contained in the FE "Notes on Procedure." The above calculations are of course specific to Edmonton College but they are included in Appendix 4 in order to show the methodology.

Phase 1 : area allocations

36. The calculated requirements were compared with the available existing accommodation in order to establish the area and types of new building required (Appendix 5). Because the pressing need was to expand the college it was not possible seriously to consider refurbishing and upgrading the existing permanent accommodation at this stage. Nevertheless some work to the existing buildings was considered essential; this related to changes in use and the better integration of new and existing buildings. Two factors were seen as influencing the translation of the calculated area requirements into a proposed area allocation:–

a. the existing classrooms (board school and temporary) were too large in relation to the majority of group sizes at the college. Hence although the total area of general teaching space in existing accommodation (including specialist rooms if converted to general teaching use) might appear sufficient for 800 FTE students, there would in fact be too few rooms available for timetabling. Because the existing classrooms did not lend themselves to subdivision it was therefore decided to increase the allocation of general teaching space by including about 600m^2 in the new extensions.

b. the increase in the number of engineering students proposed for phase 1 is marginal yet the available existing accommodation (including the old refectory hut if converted to form a space for light practical work) falls short of the calculated requirements. This highlights the overcrowding presently experienced, particularly in the workshops. However, it was decided that to rectify this did not have a high enough priority to be included in the phase 1 expansion.

37. The target floor area for the phase 1 extensions was thus set at 4,525m^2 (see Appendix 5). The gross cost of this was estimated at £1.3 million (1979) prices which included an allowance for both the small adaptations to the existing buildings and a good standard of landscaping. On completion of the phase 1 extensions the college would be accommodated as follows:–

	Teaching area	Non-teaching area (Gross Areas m^2)	Totals
Phase 1 additions	2453	2072	4525
Existing permanent buildings	1557	1193	2750
Existing temporary buildings	925	8	933
Totals (for 800 FTE)	4935 (60%)	3273 (40%)	8208

Phase 2: area allocations

38. As previously stated, in order to consider a balanced expansion of the college smaller future increments of growth (perhaps 2 or 3) have been grouped strategically into a second phase also of 4,500m^2 to serve a 400 FTE increase in student numbers. By the completion of this phase it is hoped to have taken out of use all the temporary hutted accommodation, leaving the college accommodated as follows:–

	Teaching area	Non-teaching area (Gross Areas m^2)	Totals
Phase 1 additions[1]	2184	2341	4525
Existing permanent buildings[2]	1557	1193	2750
Phase 2 additions	3412	1088	4500
Totals (for 1200 FTE)	7153 (61%)	4622 (39%)	11775

Notes: (1) central library and administration areas are assumed to expand by displacing 269m^2 of phase 1 general teaching area

(2) existing buildings are assumed to remain as at phase 1.

Phase 3

39. It is not possible at this stage to anticipate with any confidence the provision of phase 3 additions which could well be awaited for many years. However, in order to consider properly the best use of the site some broad assumptions had to be made. If demand continued to rise, a further phase of about 4000m^2 could be added so as to increase the total capacity of the college to 1600 FTE. If the existing buildings were capable of refurbishment, they could be included in this; if not they could be replaced. On the other hand if demand had fallen off, one or both of the old buildings could be demolished.

THE SITE

40. The existing site covers an area of 3.7 hectares; it is wedge-shaped, approximately 400m long and 130m wide at its widest point, and has a 50m frontage to Montagu Road. There is little or no outlook from the site; each of the boundaries is flanked by residential accommodation and public footpaths. The site is flat, containing a number of trees and shrubs, none of which is considered to be particularly worth preserving. The local authority is examining the possibility of including the site intended for a meeting hall for the local tenants' association. This fronts Brookside Road (tenants' site on Figure 1) and its inclusion would allow the closure of this section of Brookside Road. The facilities for the tenants' association could be provided as part of

the first phase of expansion, related to the communal and catering provision and sharing car parking areas. Alternatively the tenants' hall might remain a separate development within the complex.

Figure 4 shows a plan of the proposed site with the following features:

i. suggested areas of expansion of new accommodation;

ii. location of protective landscaped areas;

iii. points of pedestrian and vehicle access;

iv. car parking

Suggested areas of expansion of new accommodation

41. The college is fortunate in having acquired a relatively spacious site. This situation is rare as the majority of colleges of further education have split sites. Whereas in the past an ultimate plot ratio, that is the ratio of total floor area to site area, of say 1:1 to 1.5:1 has been considered reasonable for colleges of further education in urban areas, the shape of the site, and the nature of the college and its surrounding area will have a bearing on the selected plot ratio of the development. Taken together, the shape of the site and the nature of the character of the college environment would suggest a lower plot ratio of about 0.4:1 would be more appropriate in this instance.

42. The phase 1 additions need to be closely related to the existing buildings so that the college can function as a well integrated whole (see Figure 4). Future phases might be added at either or both ends of the site and also on building plots which may become available when the 2 old buildings are taken out of use and pulled down, and the temporary huts are either relocated on the site or removed.

Location of protective landscaped areas

43. The hatched areas (Figure 4) along the north-western boundary of the site area to be planted to provide a barrier between the college and the adjacent residential areas. The remaining hatched areas will be landscaped so as to be attractive yet require the minimum of maintenance.

Points of pedestrian and vehicle access

44. Pedestrian routes onto the site will be from three main directions: the main pedestrian footpath along the northern boundary; Montagu Road, and Brookside Road adjacent to the laundry site. Future access points may occur at Fraser Road and Brookside Road adjacent to the north-western boundary of the site. The closure is also to be considered of the pedestrian right of way running parallel with the south-western boundary of the site as this duplicates the pedestrian route along Montagu Gardens, and would provide more privacy and security to the college site at this point.

45. The main vehicular access point to the site should continue to be from Montagu Road, thus preventing additional traffic loads being put through the residential areas immediately surrounding the college site. Access to the site at this point will be improved by the addition of a 'bell-mouth' junction with Montagu Road. A second access point but with restricted use has been agreed at the opposite end of the site at the junction with Brookside Road and the laundry site.

Car Parking

46. As the college site is in a mainly residential area car parking will become a problem as the college expands. Off-site parking adjacent to the college will not solve the problem as the majority of residences are without garages and rely on street parking. Additional car parking spaces can be provided on the present college site as the college expands, but this will not meet the numbers of spaces required by the planners. Attempts are therefore being made by the local authority to identify future sites for car parking close to the college.

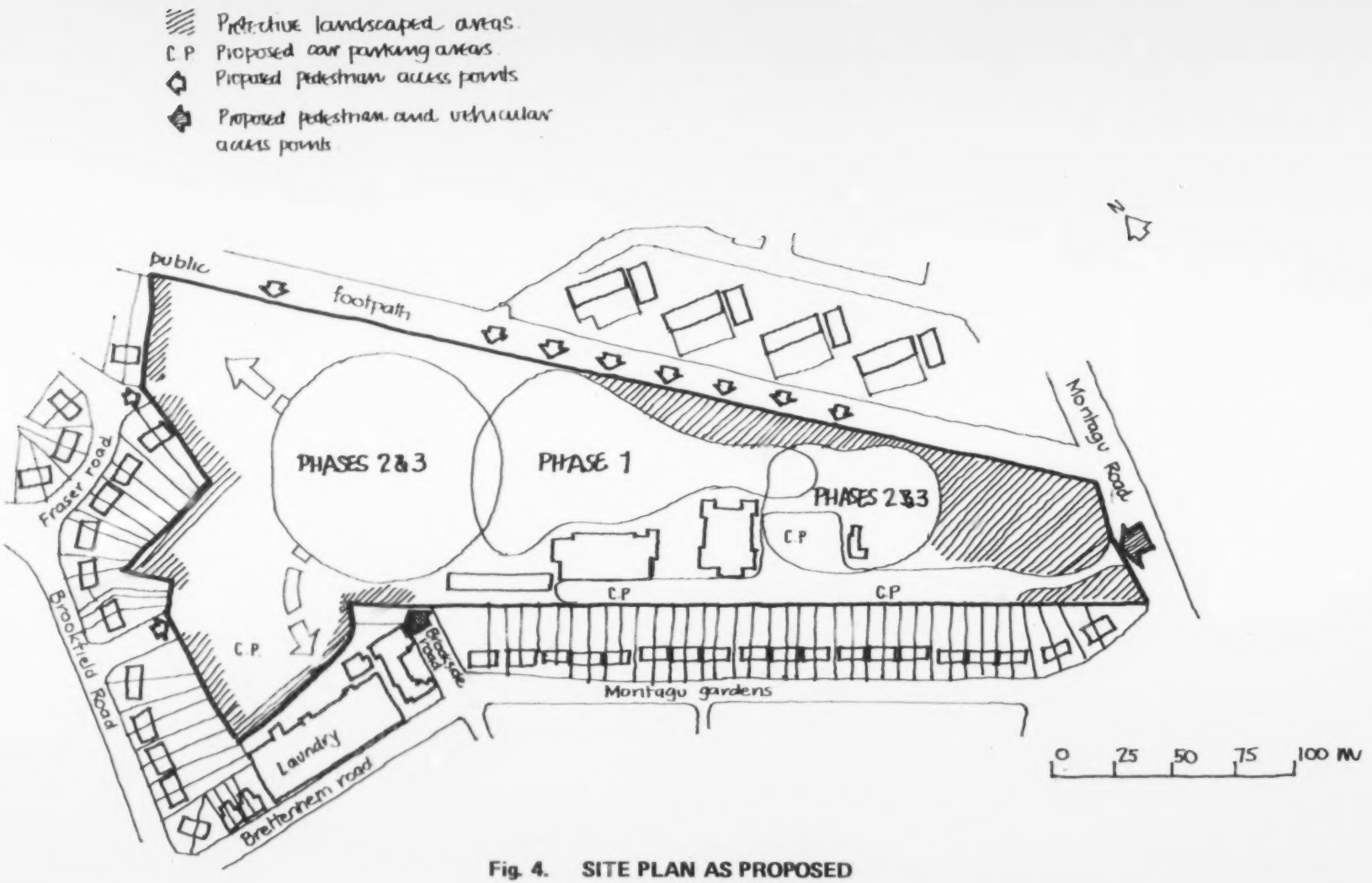


Fig. 4. SITE PLAN AS PROPOSED
(suggested areas of expansion)

THE DEVELOPMENT PLAN

47. Having established the main principles that condition the development strategy and identified a pattern of growth for the college, the working group began to look in more detail at aspects that might influence the development plan. It was already apparent that the development plan itself must not be seen as a rigid framework for the future. It must be sufficiently flexible in concept to accommodate future changes and to provide as far as possible a balanced range of accommodation at any stage.

Range of Options (See Figure 5)

48. As a first step a range of broad development proposals was considered representing the whole spectrum of available options. Figure 5(i) illustrates a 'starfish' multi-storey building with extendable legs. This solution was rejected as both inflexible and out of character. It would also have conflicted with the need to integrate new and existing accommodation as outlined in paragraph 42. Figure 5(ii) illustrates a linear 'street' solution which might have given good scale and character and allowed for flexible expansion, but would have over-extended the lines of communication in the college. Figure 5(iii) illustrates a single storey 'shed' solution which might have offered the merits of internal flexibility but would have involved expansion taking place on too broad a front, thus maximising both disruption and the problems of circulation. Similarly it would not have complied with the site development strategy (Figure 4).

49. From these initial feasibility studies two approaches to the development plan emerged:

i. a series of separate, but linked, buildings which would reflect both the likely increments of growth and the smaller administrative units within the college;

ii. a single building, with extendable ends.

The working group decided to develop each of these basic approaches so as to be able to compare their various attributes more closely. They are illustrated and discussed below.

The alternative approaches

SCHEME 'A'

50. Scheme 'A' (see Figure 6) consists of a complex of 2-storey buildings joined either by first floor enclosed links or at ground level by covered ways or cloisters. The buildings are arranged so as to enclose landscaped areas. Growth would occur by the addition of one or more complete buildings.

Advantages:–

i. growth can occur in increments of variable size to suit available finance;

ii. disturbance during building operations is minimised;

iii. breaking down the complex into smaller units should give a more appropriate scale to the development;

iv. major circulation routes, being for the most part external, can easily accomodate growth and change;

v. there is no need to include excess capacity, either structural or in services, in the initial buildings to take account of later additions;

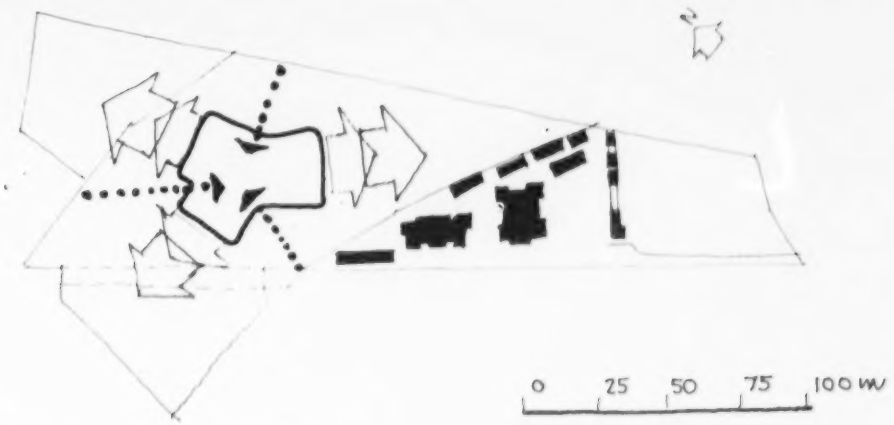
vi. materials and building construction can be varied as the college grows;

vii. localised use of parts of the complex (eg in evenings and weekends) can be more easily achieved;

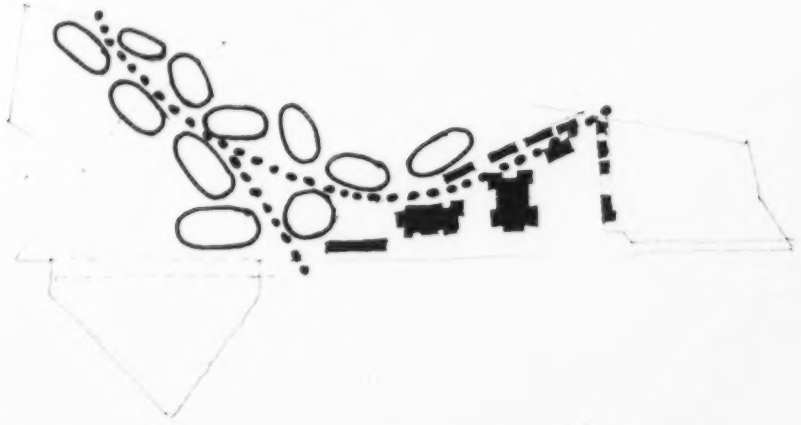
viii. statutory building requirements (eg fire escapes) are likely to prove less onerous and expensive when applied to smaller-scale buildings of this type;

ix. each courtyard can be given its own character and landscape, so helping to identify it and give it a sense of place.

(I) A 'Starfish' type solution



(II) A linear street type solution



(III) A single storey 'shed' type solution

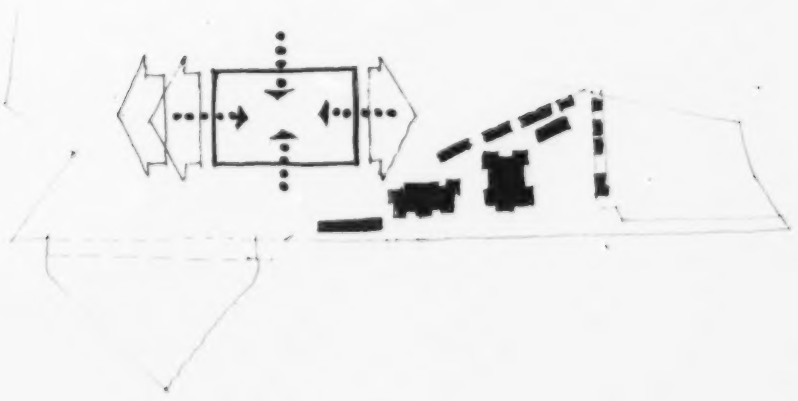


Fig. 5. EXAMPLES OF DESIGN OPTIONS

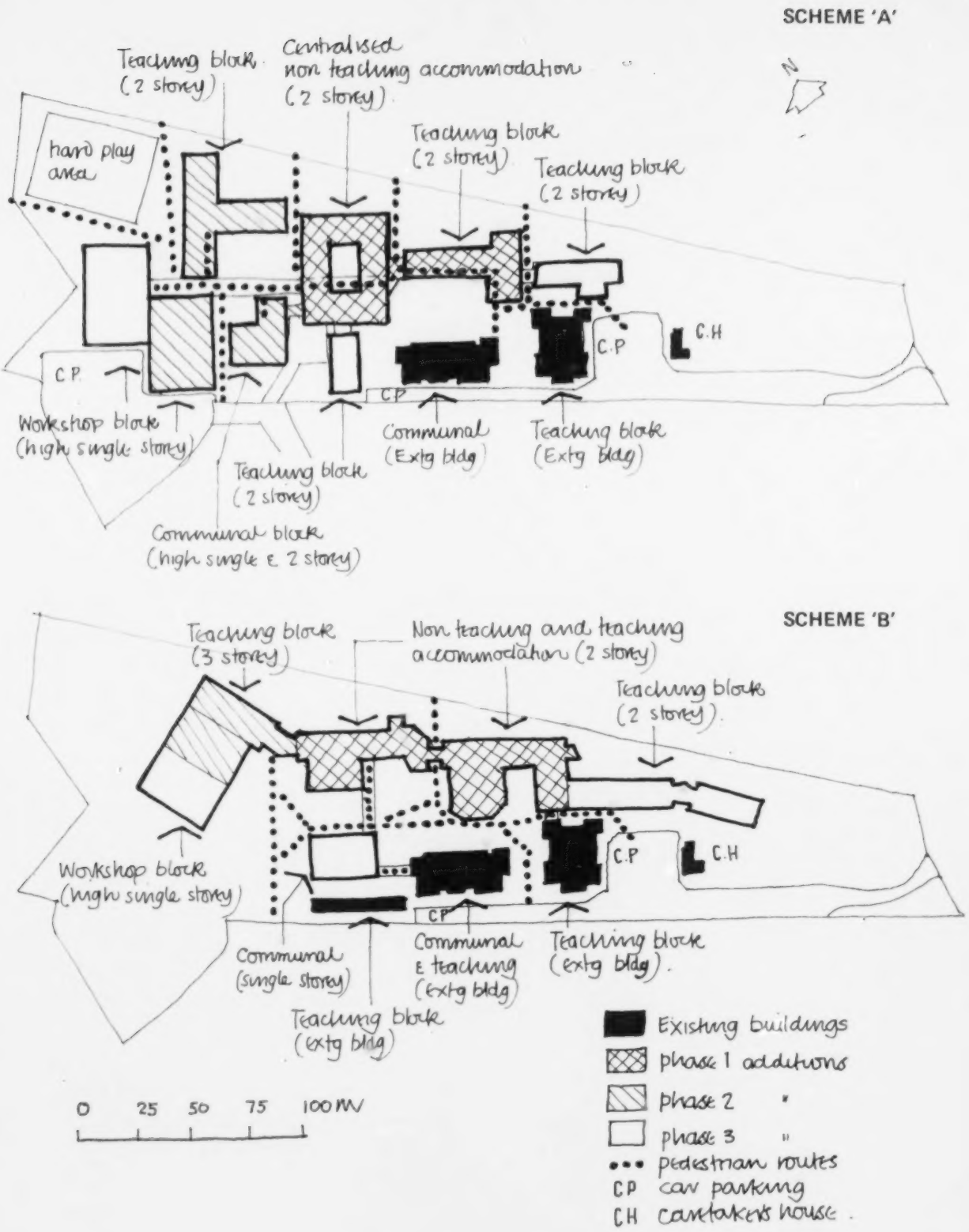


Fig. 6. ALTERNATIVE APPROACHES TO THE DEVELOPMENT PLAN

SCHEME 'B'

51. Figure 6, Scheme 'B', also illustrates a linear development initially 2-storey, growing in the future by means of extensions (of 1 to 3-storeys) at each end. The axis of the completed development would run broadly parallel to the north-west boundary of the site.

Advantages:—

i. a strong sense of unity can be fostered as the college grows;

ii. all circulation can be routed inside the new buildings;

iii. "shunting" of adjacent accommodation may be possible in response to changes in course demand.

52. In terms of the basic design approach, the question remained as to whether the major aims of unity and internal circulation of scheme B could be said to balance the various practical advantages of the alternative. On closer examination the benefits appeared doubtful, as this 'nucleus route' would come under increasing pressure as the college expanded and severe congestion could well become a problem in the future. The concept of the creation of a 'single college' ethos was eroded in this instance by 2 factors:

i. the presence of existing accommodation in separate buildings;

ii. the need for the college to be able to reorganise as it expands (paragraph 23).

53. When assessing the 2 schemes in relation to the strategic objectives set out in paragraphs 19-26 it became apparent that in terms of character, organisation, and disturbance and disruption the balance of advantage clearly lay with scheme A. In addition the small-scale approach to the expansion of the college was clearly the more capable of responding to changes in the anticipated pattern of growth of the college, whether these changes were to be occasioned by the level or nature of future demand or future financial constraints.

54. The working group therefore continued to develop scheme A and to consider in more detail how it might meet the overall strategic objectives, whilst avoiding at this stage a strong commitment to specific design solutions.

Organisation

General

55. The college is likely to find a need to reorganise as it expands (paragraph 23). Figure 7 illustrates how an organisation based on subject departments might operate over the first 2 phases of expansion. Departments would be based in the specialist teaching areas most specifically related to their needs, together with some associated staff provision. If the servicing is flexible there is likely to be an overlap in the requirements of the individual departments so that the boundaries between them can move in response to changes in demand. General teaching rooms would not be tied to individual departments but would be located so as to be easily accessible from all parts.

Phase 1

56. Three departments would be based in a new teaching block, whilst Engineering would remain based on the ground floor of the existing 3-storey building, together with the adjacent temporary accommodation. Both general teaching and non-teaching areas are shared between departments, whilst the library, administration and communal provision would form the link to future expansion.

Phase 2

57. A second teaching block comprising mainly specialist provision would now form the departmental base for Engineering (together with new workshops) and Social Work which would be moved from its phase 1 location. Commerce and General Education would thus be able to expand from their phase 1 bases into the space vacated by Social Work. The shared accommodation would remain easily accessible to each of the 4 departments, and might be expanded by the addition of further communal and general teaching provision.

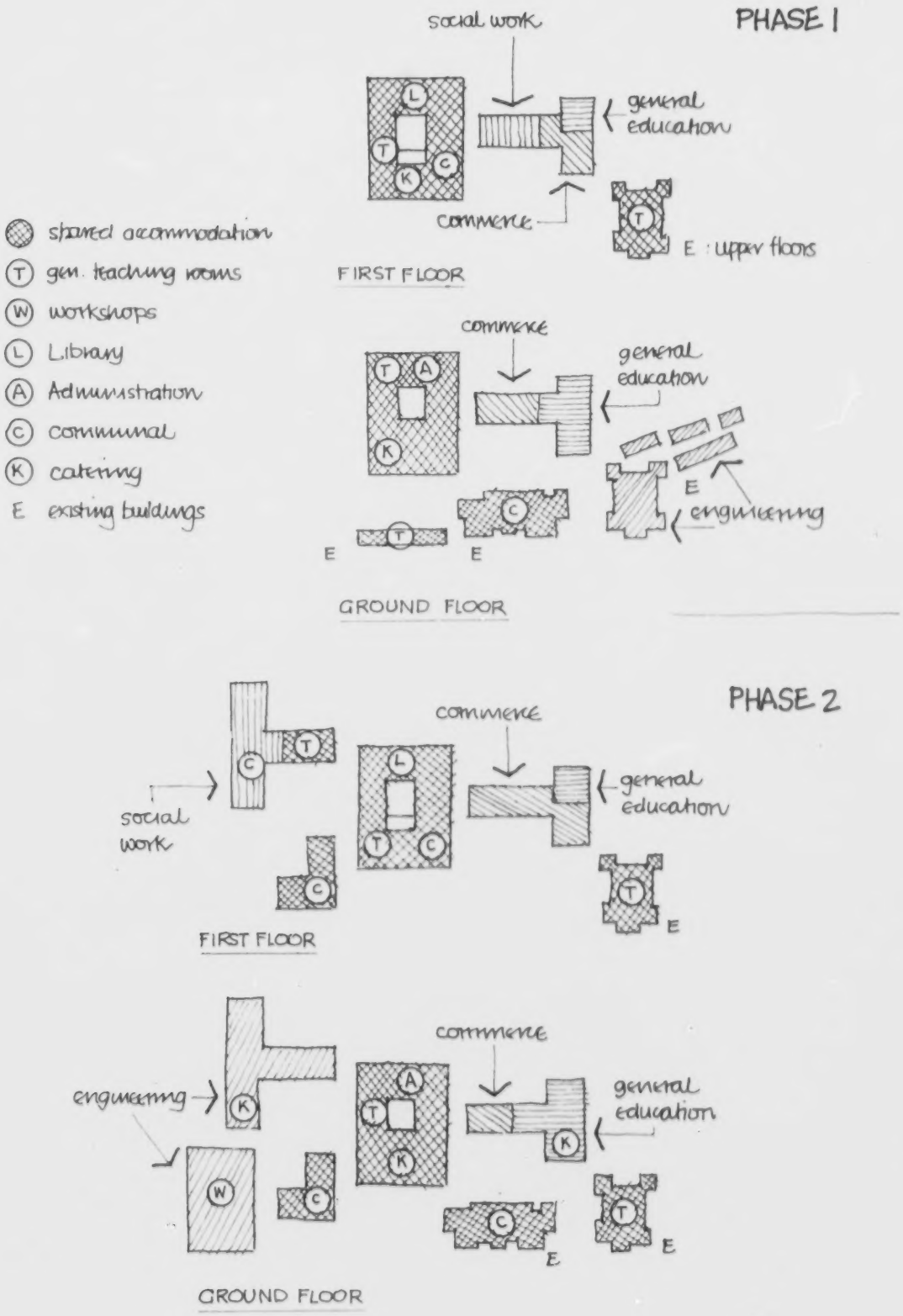


Fig. 7. DEPARTMENTAL ORGANISATION AS THE COLLEGE EXPANDS

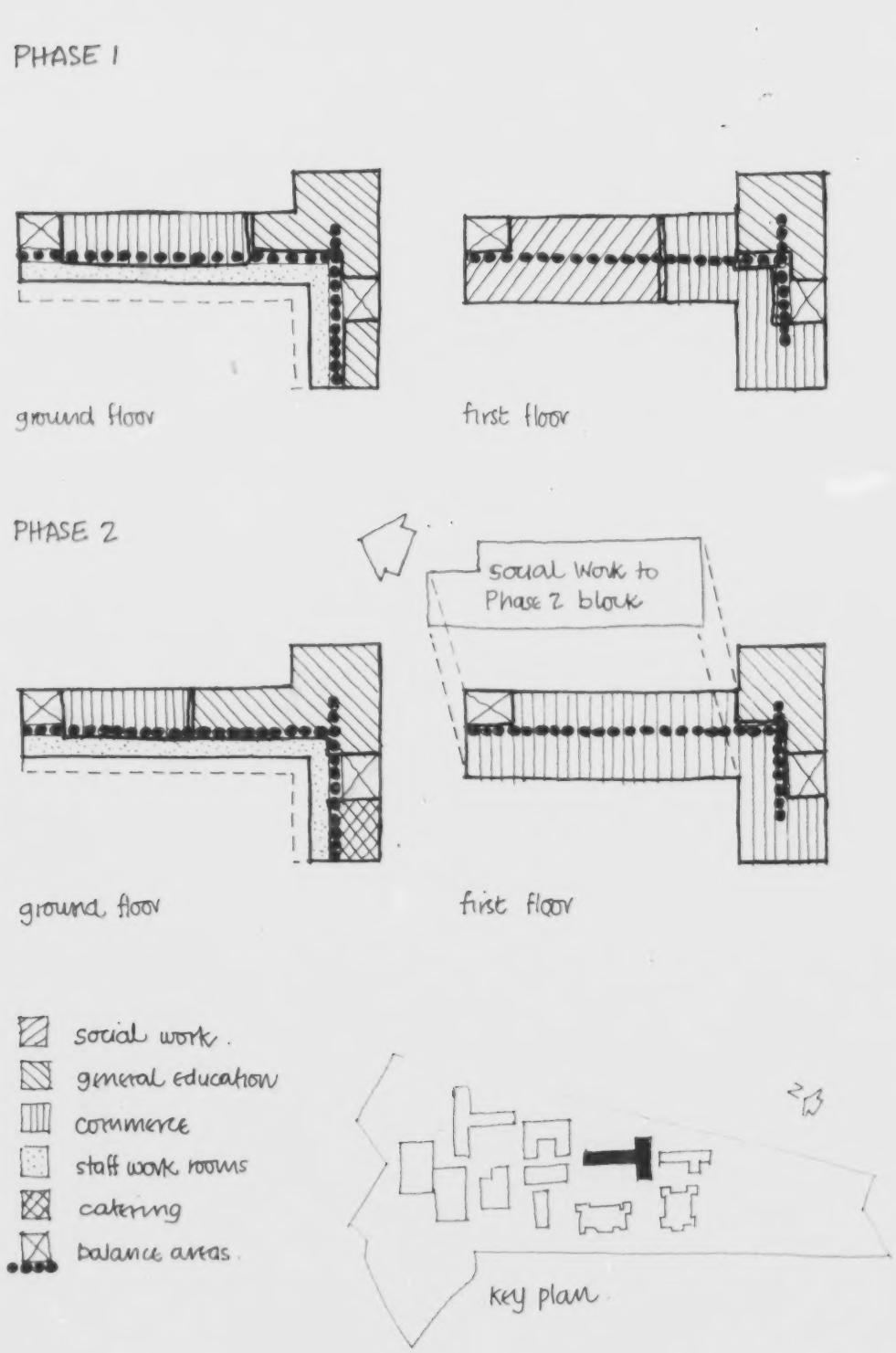


Fig. 8. CHANGE OF USE: specialist/serviced teaching block

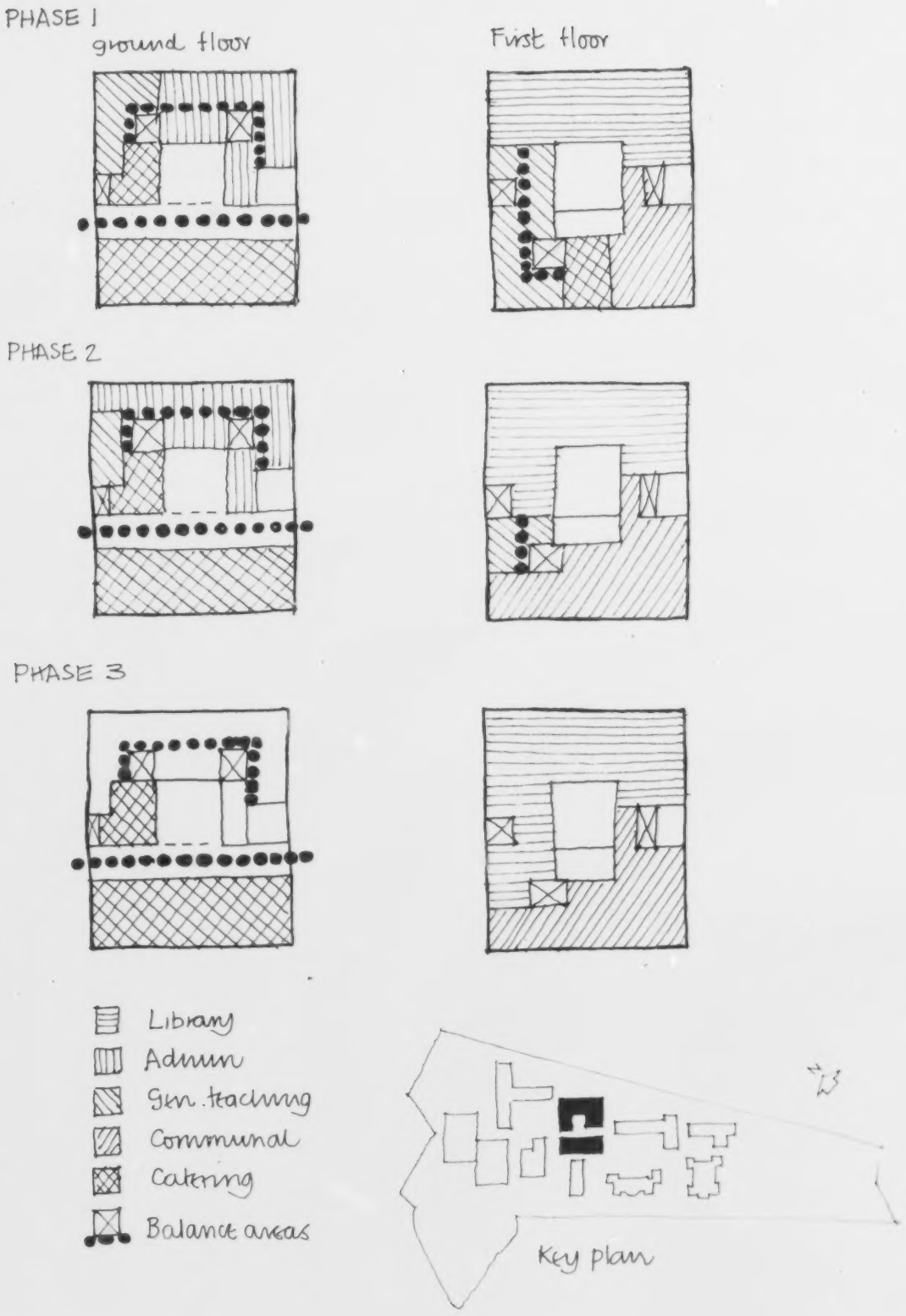


Fig. 9. CHANGE OF USE: Library/Admin/Communal block

Growth and change of use

General

58. Changes in the use of accommodation may be occasioned by annual fluctuations in student numbers and course demand. These changes are by their nature unpredictable and the ease with which they can be met will depend on the flexibility that can be built into the accommodation at the detail design stage. However at the development plan stage a close consideration will need to be given to the foreseeable changes in use that may arise from the phased growth of the college. Two examples are important in relation to Edmonton College: firstly the need to provide departmental bases as the college grows (see paragraphs 55-57) and secondly the need to expand, from a centralised location, the administration, library and communal provision.

Specialist Teaching Block (Phase 1)

59. This will initially form a base for 3 departments (Social Work, Commerce, General Education) and the completion of a second similar block in phase 2 will allow each of these departments to expand. However it will obviously be desirable to avoid the dispersal of accommodation forming individual departmental bases between the 2 blocks. For this reason it is proposed that one department (provisionally assumed to be Social Work) would move out of the phase 1 block upon completion of phase 2. Figure 8 shows how this might be achieved, and clearly this approach would have implications at the detail design stage.

Library, Administration and Communal Block

60. This block would, if the college were to grow to 1600 FTE, provide virtually all the accommodation for administration and the library, together with a proportion of the catering and communal provision. However at the 800 FTE stage of growth the numbers do not justify such areas of non-teaching provision, so some general teaching accommodation is included in the block. Figure 9 shows how this might be gradually displaced by the growth of non-teaching areas, thus avoiding the need to extend the block itself.

Disturbance and disruption

General

61. The expansion of the college in 3 phases, and the possibility of the later phases themselves being composed of 2 or 3 smaller increments, poses a problem of disturbance to people in the college while building work is carried out. This disturbance may take the form of the noise and dirt associated with building work, or traffic from contractors' or suppliers' vehicles. There is also a need to consider how best to ensure that landscaped areas can be established as the college expands without them suffering from the effects of later building operations. All these factors must be taken account of in the development plan.

Phase 1.

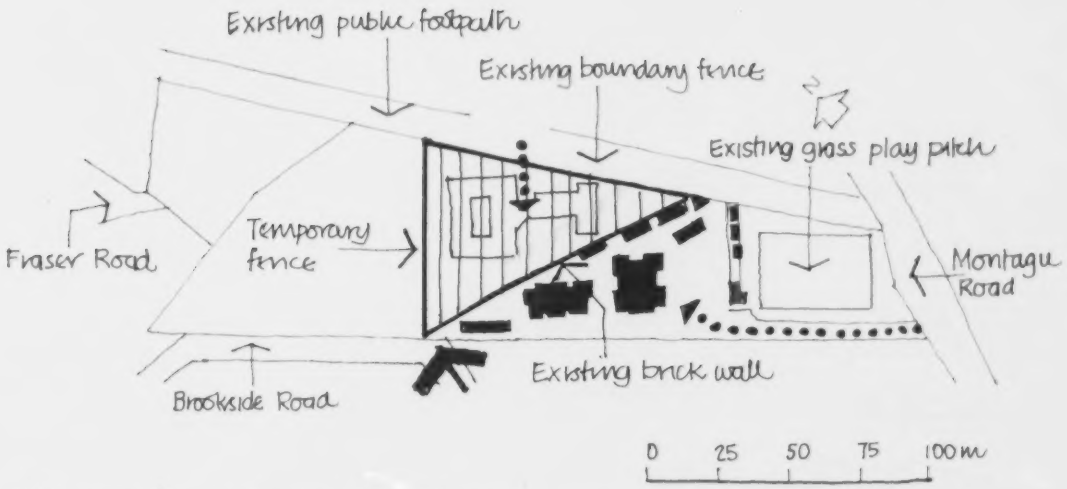
62. It is hoped that contractors may be allowed access from Brookside Road (Figure 10). This would allow all the building work and the majority of the landscaping to be carried out to the north west of the existing 2m high brick wall, as shown. New landscaping work would be limited to the phase 1 site.

Phase 2.

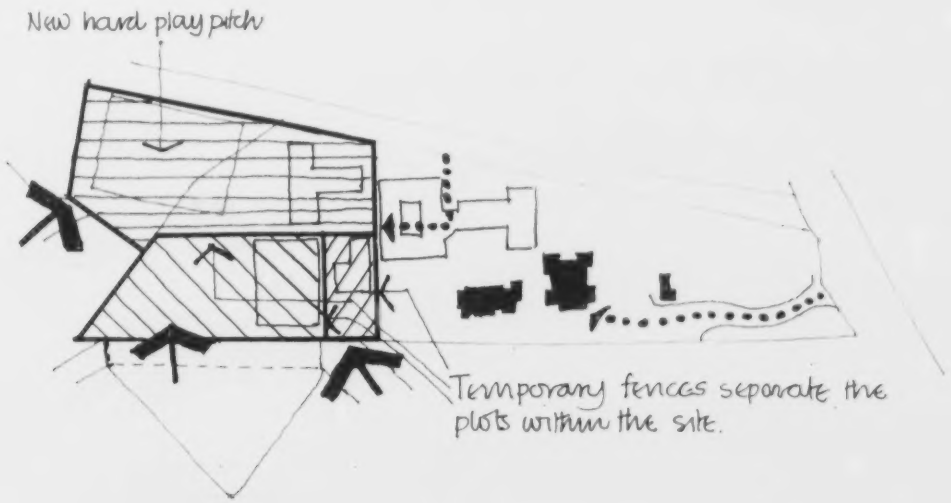
63. Figure 10 illustrates the potential building plots that would relate to a phase 2 expansion in 3 increments whose sequence need not be pre-determined. Again the landscaping work would be completed only within the building plot proposed for each increment, whilst pedestrian circulation can be maintained throughout phase 2 along the perimeter of the various plots.

Community involvement

64. Most of the community provision that might have been considered for inclusion within the college complex already exists at Edmonton Green (½ mile) where there is a large shopping



(I) Building plot related to Phase 1 increment of growth.



(II) Building plots related to Phase 2 increments of growth

Plot for phase 1 construction

Plots for phase 2 construction or subsequent phases dependent on size of increment of growth.

Building contractors' access point

Main pedestrian route.

Fig. 10. POTENTIAL BUILDING PLOTS AS THE COLLEGE EXPANDS

centre also including a swimming pool, branch library, public houses, flats, multi-storey car parks and an adjacent youth club. However the college as it expands will offer an increasingly valuable educational resource to the local community, and the range of non-teaching provision is likely to attract local demand for recreational use. In addition there remains the possibility of separately funded provision being incorporated into the complex as it expands – for example a meeting hall for the local tenants' associations has been considered in relation to phase 1. Whether such provision would be integrated into the college accommodation or sited as a separate entity within the complex remains to be determined. It is important that the development plan should define a pattern of circulation and access that acts as a positive invitation to the community without at the same time imposing upon the college an unacceptable degree of exposure.

65. In considering the use of accommodation outside periods of peak use it is desirable both in terms of running costs and security that such accommodation is readily accessible whilst the remainder can be shut. Figure 11 demonstrates that a development of smallish blocks closely related to clearly defined circulation routes can readily offer this facility.

Character

66. A development plan based on separate, but linked buildings not exceeding 2-storeys in height provides an opportunity to produce a design solution which is small in scale and friendly in appearance (Figure12). Separate buildings of the types and sizes proposed could be topped with simple pitched roofs; their interiors could be largely naturally lit and ventilated. Workshop accommodation might consist of standard industrial units with north light windows and capable of easy extension.

67. Enclosed links between buildings at first floor level might be lightweight in both construction and appearance so as to allow linkages to be made in any desired direction with minimum interference and disruption to the existing structure (Figure 13).

68. A circulation pattern based on a major pedestrian route straddled at its centre by non-teaching accommodation (Figure 14) should help to emphasise the essential unity of the college. The prominent siting of snack bars and recreational facilities should help create a non-institutional atmosphere.

69. The strategy of enclosing landscaped areas

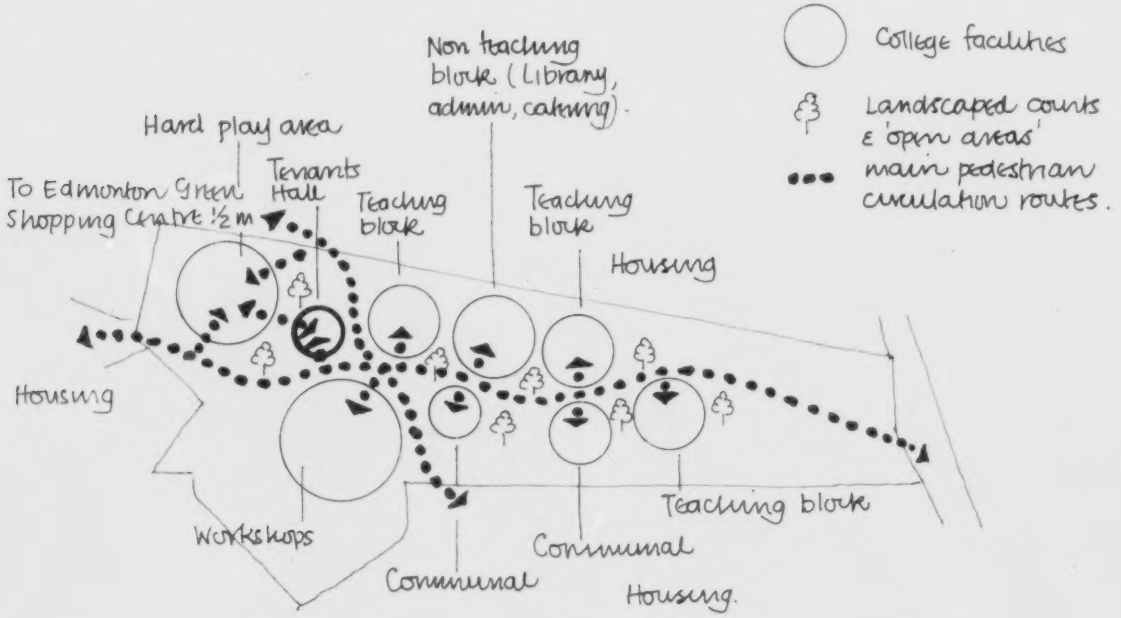


Fig. 11. SITE AMENITIES AVAILABLE TO THE COMMUNITY

Fig. 12.

Fig. 13.

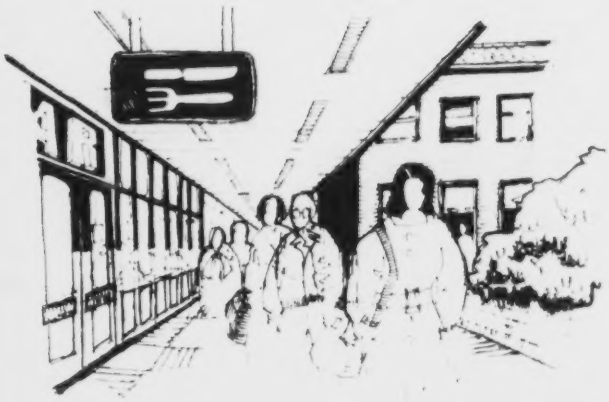


Fig. 14.

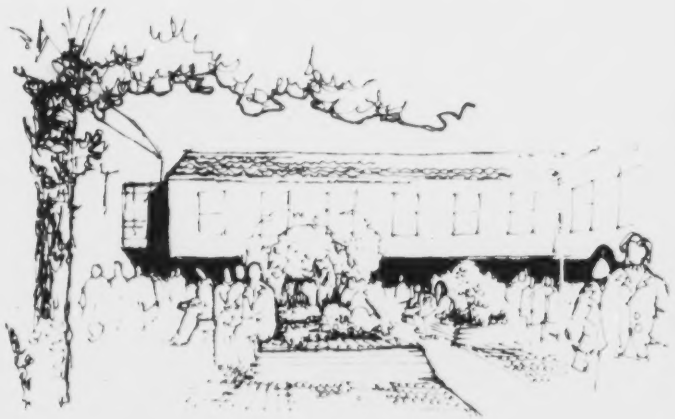


Fig. 15.

as the college expands will allow a variety of external spaces, overlooked by the college buildings, where students can sit and read (Figure 15) or stroll leisurely through the grounds. A hard play pitch will be provided in phase 2 for more boisterous activities.

Development Proposals: Phases 1-3

70. Having set up a framework for expansion it was possible to proceed to a more detailed consideration of the nature and type of provision required, the relationship between various categories of accommodation, the role of the existing accommodation at each stage, and the specific problems associated with the uncertainties of future growth. All these factors are closely interrelated and so, for the sake of clarity, they will be covered briefly in the form of a general description of the first 2 phases of growth. It was not considered useful to attempt to look ahead in any detail beyond phase 2, other than to consider how the site might best be used.

PHASE 1 (see Figure 16)

New Teaching Accommodation (2453m^2 gross)

71. The bulk of this (1845m^2) would take the form of specialist areas intended initially for the use of commerce, social work and general education courses. The servicing and subdivision of this space would need to be arranged so as to allow as flexible a boundary as possible between subject areas to cater for future changes in course demand. There were two reasons for the decision to house these areas in new buildings. Firstly the existing areas are poorly serviced and upgrading would involve considerable expense; and secondly a split of specialist accommodation between old and new buildings was felt to be highly undesirable in terms of the operation of the college and the efficient deployment of non-academic staff. The remaining teaching area (608m^2) would comprise general teaching rooms each for between 15 and 20 students (see also paragraph 36a).

Teaching Accommodation in Existing Buildings

72. Engineering workshop accommodation would continue to be housed on the ground floor of the 3-storey building and might be expanded to take in the present ground floor administration reception area. The 2 engineering huts would remain in use and the existing refectory hut could be given over to light practical work. The upper floors of the 3-storey building, which currently comprise mainly specialist areas for commerce and general education courses would be turned over to classrooms by the removal of the existing somewhat rudimentary services and fittings. Unfortunately they are nearly all too big (25-30 places when used for general teaching) to suit the overall room size distribution required, but adaptation would be difficult due to the pattern of fenestration and the high ceilings; this area wastage was therefore accepted.

New Non-teaching Accommodation (2072m^2 gross)

a. Library and Administration

73. Both these functions require a central position in the college throughout its growth. In both cases the area needed increases in line with the growth in student numbers. Thus after phase 1 the library needs to be 528m^2 in gross area, whilst by completion of phase 3 it will need to have expanded to become 897m^2. Similarly the administrative areas will need to grow from 450m^2 to 600m^2. While it might prove acceptable to disperse certain elements of the administrative accommodation and even desirable to scatter the private study function of the library, at this stage the option to keep these areas in a central position should be left open. Therefore provision must be made in phase 1 for their future growth. The working party considered that growth by means of built-on extensions would be highly disruptive in this central position, and that expansion into adjacent previously built areas would prove the more satisfactory arrangement. A suitable reservoir of space for this purpose was the 608m^2 (gross) of general teaching accommodation which would gradually be displaced into the later additions.

b. Catering

74. The college site is some ½ mile distant from the nearest commercial catering provision which is at Edmonton Green. Thus there will be a continuing demand for on-site catering facilities. Based on the experience gained from the joint visits, the working group felt that the typical single central refectory would be completely out of character with the development strategy. What seemed to be needed was a limited number of small-scale catering points each offering a one-off menu and having its own distinctive character (eg hamburger, pizza bar) and being capable of serving about 240 cooked snacks at lunch-time. If these dispersed catering points were carefully integrated into the growth of the college – and it is vital there is not over-provision – they should do brisk business and prove economic in operation with at most 2 staff each. However they would need to be serviced by a central preparation/

storage area; and some traditional full meals would also continue to be required. In phase 1 a central kitchen (158m^2 gross) would be provided which, together with a central dining area (165m^2 gross), would suffice for 120 main meals plus 60 snacks. In addition a single dispersed catering point (138m^2 gross) would provide for both serving and eating 240 cooked snacks. There would also be a small coffee bar (39m^2 gross). In phases 2 and 3 the kitchen would be capable of increasing main meal production by 50% as well as servicing further dispersed small catering points.

c. Communal

75. Student and staff social areas (321m^2 gross) would be housed in new accommodation, and the manner of this provision would undoubtedly prove a major influence on the

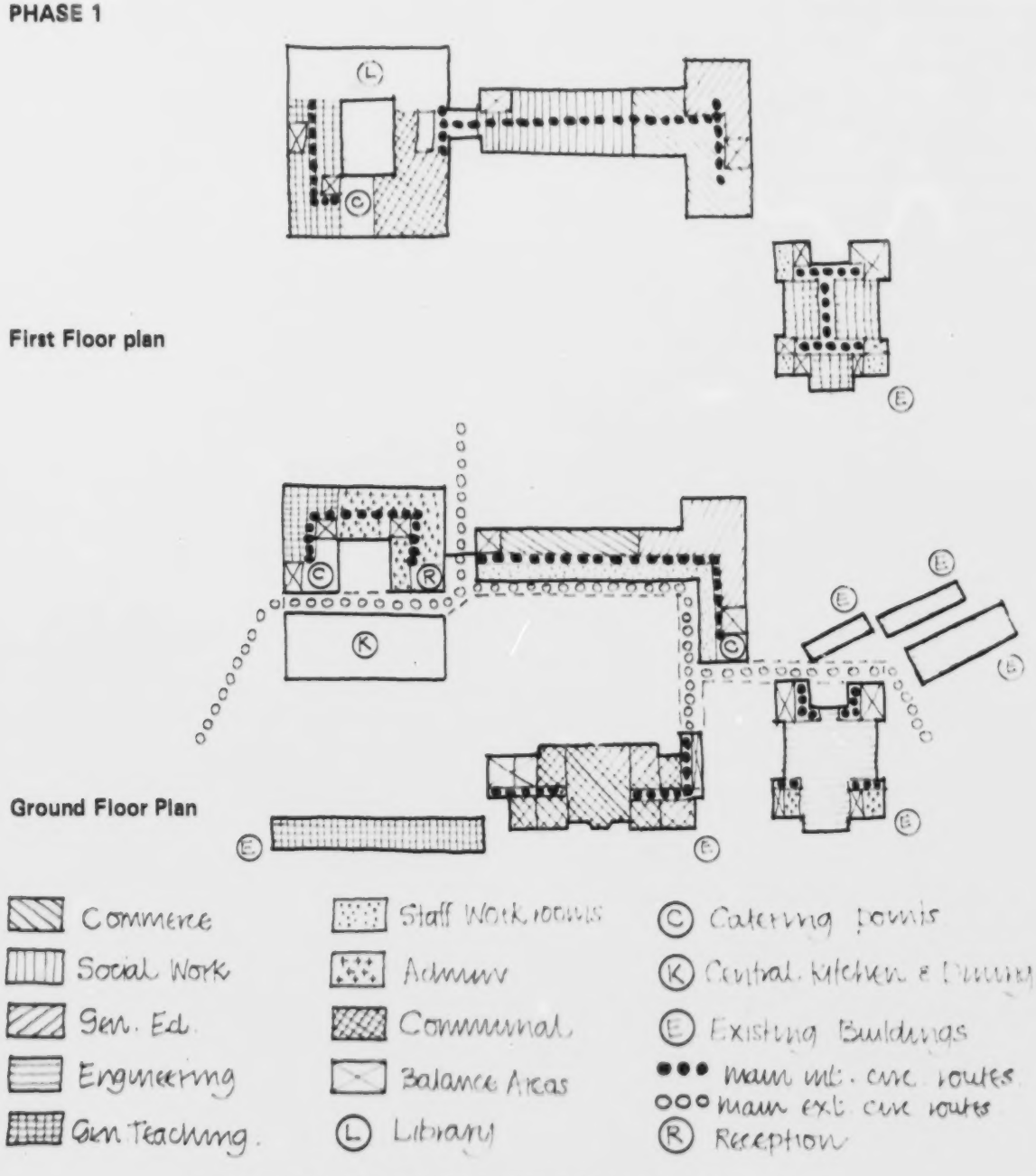
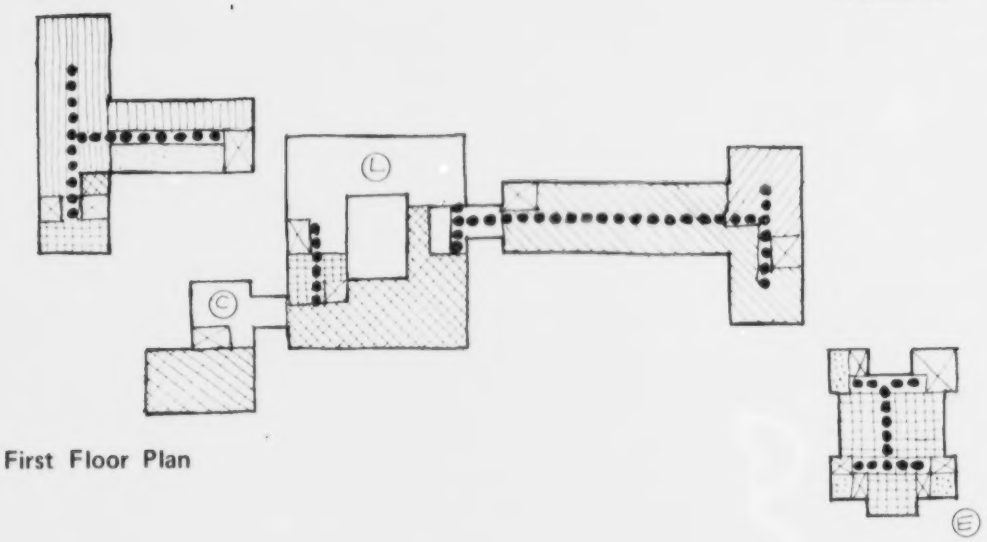
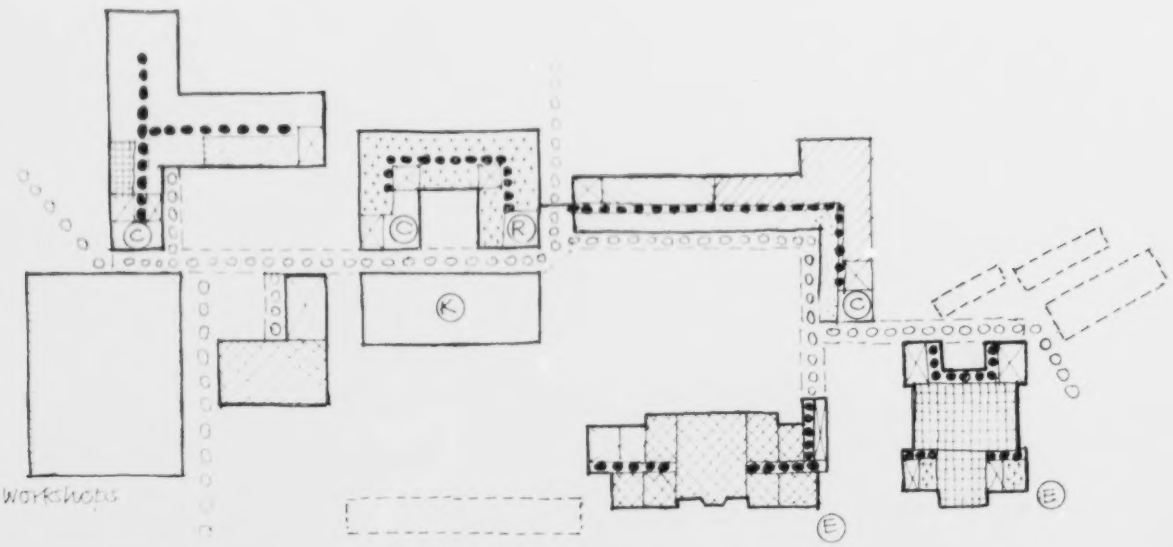


Fig. 16. PHASE 1 DEVELOPMENT PROPOSALS



First Floor Plan



Ground Floor Plan

Commerce
Social Work
Gen. Ed.
Engineering
Gen. Teaching
Staff Work rooms
Admin.
Communal
Balance Areas
(L) Library
(C) Catering Rooms
(K) Central Kitchen & Dining
(E) Existing Buildings
●●● main int. circ. routes
○○○ main ext. circ. routes
(R) Reception

Fig. 17. PHASE 2 DEVELOPMENT PROPOSALS

character of the college. In order to maintain a sympathetic scale and avoid unnecessary circulation, future additions of social area should be dispersed rather than expanded centrally. It will be advantageous if some of the social area can be arranged to give an overlap with the small catering points. In phase 1 the physical recreation component of the communal provision would be housed in existing accommodation.

d. Staff Workrooms

76. Workrooms for academic staff (208m^2 gross) and non-academic staff (65m^2 gross) would be closely related to the specialist teaching accommodation. By providing workrooms each to be shared by a number of staff (perhaps 4-6), space could then be found to provide also a small private interview room or two in which a member of staff could meet one or two students and/or parents.

Non-teaching Accommodation in Existing Buildings

77. The small rooms in the 3-storey building would be used as academic and non-academic staff workrooms (443m^2). In the single storey building the hall (300m^2) would remain as a physical recreation space, whilst the adjacent area now used as a library would be converted to form changing rooms with showers. The remaining rooms in this building could be used for weight training, table tennis, pin-ball machines and the like.

PHASE 2 (See Figure 17)

New Teaching Accommodation (3412m^2 gross)

78. The working group saw as a priority the need to expand engineering courses and to rehouse the existing workshops. For this purpose some 1600m^2 (gross) of new workshop accommodation would be required, and this might form the first increment of growth in phase 2. As a second increment of growth some 1123m^2 (gross) of specialist/serviced accommodation would provide both for light practical engineering work and for the expansion of Commerce, Social Services and General Education courses, with 689m^2 of related general teaching space which would include 269m^2 displaced by the expansion of central facilities.

New Non-teaching Accommodation (1088m^2 gross)

79. A dispersed catering point would be related to the new teaching accommodation and an additional coffee bar incorporated strategically within the whole complex. Staff workrooms would be related to the new teaching area, whilst communal provision might be expanded in the third phase by the inclusion of a small, multi-purpose hall with storage and changing rooms, together with additional social area. Library and Administrative areas would expand centrally as described above.

Use of Existing Buildings

80. The existing workshop accommodation on the ground floor of the 3-storey building would be converted to suit the needs of the day, perhaps general teaching or staff social area. This, together with the provision of new light practical space for engineering courses, should facilitate the removal of all temporary huts, thus greatly enhancing the general appearance of the complex. The construction of a new hall with changing rooms would allow serious consideration to be given to the demolition of the existing single-storey building.

PHASE 3 (see Figure 18)

81. The accommodation that would be required following a phase 2 expansion is obviously dependent on both the future role of the existing buildings and the future level of course demand (see para 39 and Figure 3). It is therefore only realistic to consider phase 3 in the broadest terms so as to keep as many options open as possible. Figure 18 shows 3 possible scenarios:

a. demand falls off after phase 2, the existing buildings are demolished or put

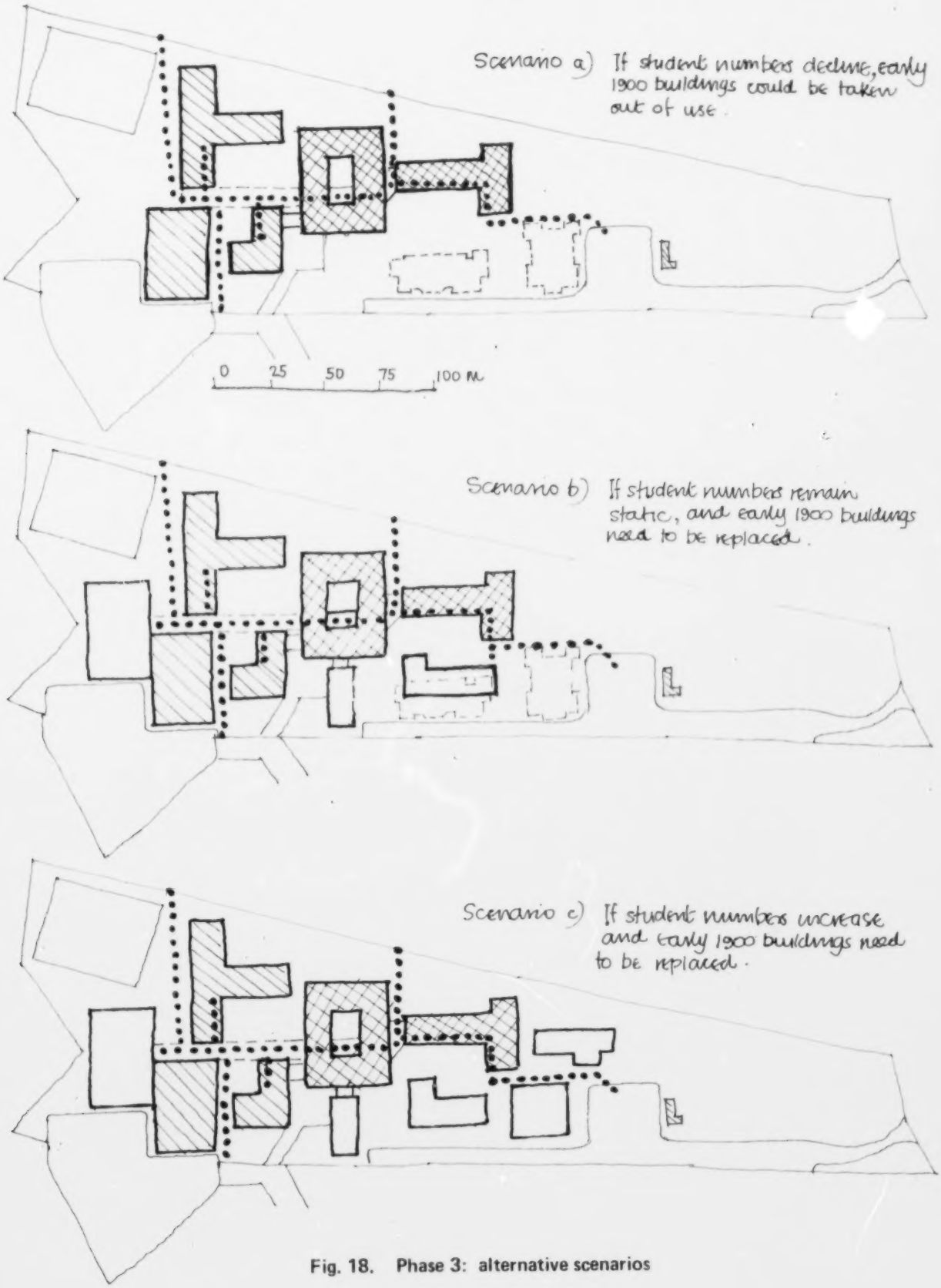

Scenario a) If student numbers decline, early 1900 buildings could be taken out of use.
0 25 50 75 100 M
Scenario b) If student numbers remain static, and early 1900 buildings need to be replaced.
Scenario c) If student numbers increase and early 1900 buildings need to be replaced.

Fig. 18. Phase 3: alternative scenarios

to other use and the college retracts into its new accommodation, with a total capacity of about 800 FTE (Figure 18a);

b. demand remains broadly static after phase 2 but the existing permanent accommodation needs to be replaced; the capacity of the college would remain at about 1200 FTE and the existing teaching accommodation in the 3-storey building would continue in use until phase 3 is completed (Figure 18b);

c. demand continues to rise after phase 2, and a phase 3 addition is built increasing the capacity to 1600 FTE; the existing buildings are subsequently replaced, giving a further increase in capacity if required (Figure 18c).

82. Clearly there remains much work to be done in the translation of these proposals into a scheme design. A number of design points still need to be resolved as the scheme is developed; these include deciding whether the library should be on the first floor (as proposed here) or at ground floor level; the need to make the main entrance more prominent; the grouping of staff workrooms. In addition the inclusion of the tenants' meeting hall has yet to be agreed, and there may well be planning constraints in relation to access for contractors' vehicles. Nevertheless the identification of a growth pattern for the college, together with a strategy for the development of its site, provides an invaluable framework within which to consider the many more detailed decisions that have yet to be taken. It will allow resources as they become available to be deployed to the best advantage.

CONCLUSION

83. In conclusion, it may be helpful to draw out and reiterate a few of the main points that have been made and illustrated in this paper.

NAFE: a new and changing scene

84. The group of students for whom the courses to be held in the expanded college are intended is, as we have seen, one for which too few suitable educational opportunities are at present available. Moreover, the types of course which these young people will need – extended basic education and vocationally oriented courses to fit them for prospective future employment – are not immutable and may well change quite rapidly in line with changes in the social and economic environment. One paramount consideration must therefore be to keep continually under review the nature of and balance between the courses provided in the light of employment opportunities in the area at any time; another will be the need to make these courses, and the physical surroundings in which they are taught, as attractive as possible to young people for whom further education may otherwise appear merely as a continuation of the process of under-achievement which they have experienced at school. These are difficult but potentially rewarding targets to be met.

Phasing

85. As we have seen, it is unwise to plan a large new college or the major expansion of an existing one in the expectation that resources can be made available for its completion in a single operation. The most satisfactory approach is to plan for expansion in a series of discrete phases, each of which can at its completion leave the college self-contained with reasonably complete buildings and a good mixture of accommodation types. It is not desirable that delays in the completion of an expansion plan should result in unusable accommodation of one type standing empty while another type is under-provided, and the possibility must also be considered that delays will result in a major change in the type of courses to be taught before the entire premises are ready.

Flexibility

86. In the longer term, it is also essential to bear in mind the possibility that the buildings' use in, say 50 years' time, may be quite different. It is not possible to predict what the needs of future generations of students will be. But it is often possible without incurring disproportionate costs to design buildings to be

considerably less inflexible than many which are at present having to be used in ways for which they were not designed. Spaces should be so designed that they can be used in a variety of ways or converted from one kind of use to another. The design should also allow combinations and relationships between adjacent spaces and groups of spaces to be varied.

APPENDICES

Contents:

Appendix 1 : The London Borough of Enfield – a description

Appendix 2 : Edmonton College – history and courses offered in 1978-79

Appendix 3 : Calculations of teaching area capacity in the existing buildings

Appendix 4 : Calculated accommodation requirements for 800 FTE

Appendix 5 : Area allocated for 800 FTE students at the end of phase 1

LONDON BOROUGH OF ENFIELD

Fig. 19.

APPENDIX 1

THE LONDON BOROUGH OF ENFIELD – A DESCRIPTION

1. The Borough of Enfield is on the northern edge of Greater London (see Figure 19). Its administrative centre Enfield Town is some 10 miles from Charing Cross: the Borough covers a roughly square area of some 31 square miles extending from Southgate to the Lea Valley and from Edmonton to Enfield Lock.

2. The population of the Borough, like that of London as a whole, has been declining since about 1951 and the combination of a net outflow and a lower birth rate will lead to a continued fall. The 16-18 age group, from which most students on full-time NAFE courses will be drawn, numbered 11,190 in 1977 and is expected to reach approximately 12,000 in 1982 before falling to approximately 10,200 in 1991. The 20-44 age group will increase throughout this period while those aged over 45, including the retired who constitute a large part of the demand for daytime adult education, are expected to decline in number.

3. Of the economically active population of Enfield some 40% are employed in intermediate non-manual and service occupation; a little over 20% are employed in skilled manual work, and slightly under 20% in semi-skilled and unskilled manual work; while professional and managerial occupations account for about 14%. The professional and managerial group is concentrated in the western part of the Borough, as is the intermediate non-manual service group; whereas the skilled, semi-skilled and unskilled manual groups are concentrated in the east. The dividing line is very roughly along the Great Cambridge Road, the more westerly of the two principal north-south roads (see Figure 19).

4. This social and economic division is reflected in the types of housing in different areas. In the west the houses are mostly owner-occupied, semi-detached and built between the wars, but with some high density post-war developments. There are small areas of local authority housing but the main concentration of this type of housing is in the east where since 1945 it has replaced the pre-1914 terraces.

5. The majority of employment opportunities in the Borough are in the east, in the industrial estates which tend to draw their labour force from the locality. Smaller centres of employment exist in the western half, with office developments and some industrial premises. In the north-west there is a small amount of employment in farming and horticulture. Sixty two per cent of the economically active population in the east work within the Borough, while in the west, where many of the professional and managerial groups travel to Central London to work, only 44% are locally employed. Those who commute out of the Borough will clearly only be able normally to participate in adult education classes after about 7.00 pm, whereas those who work locally – who are more numerous in the area in which the college is situated – may be able to take advantage of lunch-time and early evening classes and day or block-release from work.

6. In 1971 about 40% of the economically active population of the Borough were women. Of those who were married nearly 50% worked part-time tending to continue in part-time work when returning after bringing up children. The majority of women are employed in intermediate non-manual and service occupations – mainly clerical and office work – or in unskilled manual work, mainly factories. Most work in the Borough.

7. Types of employment which exist in the Borough at present and which require consideration in designing the courses at a college specialising in low-level further education include:

i. manufacturing industries – these have suffered a less serious decline as a source of employment in Enfield than in most London boroughs, electrical and mechanical engineering firms being particularly active;

ii. warehousing and distribution – a relatively small employer but comparatively important to potential NAFE students;

iii. offices serving manufacturing and distribution establishments;

iv. offices providing services – eg public and financial;

v. hospitals;

vi. retail traders;

vii. hotels;

viii. market gardens.

8. There are 3 groups which may be considered to have particular educational requirements:

i. **Immigrants**

The 1971 census shows that 24,070 people in Enfield, (9% of the Borough's population) were born outside the United Kingdom. Of these, nearly half were from New Commonwealth countries – especially Cyprus, the West Indies and India – and many of the others were from the Irish Republic or Italy. 30,750 (11.5%) had both parents born outside the United Kingdom and of these some 13,900 had parents from New Commonwealth countries, including a comparatively high proportion of children under 15. The immigrant population is concentrated mainly in the south and south-east.

ii. **The Handicapped**

The handicapped and especially those who are unable to find work because of their disability, or who suffered from severe learning difficulties while at school, need special consideration. There are 5,818 registered disabled people in the Borough.

iii. **The Unemployed**

The Borough does not have an unusually high level of unemployment, but most job vacancies are for skilled and semi-skilled manual workers while most of the unemployed (including many of the 16-18 year olds) are unskilled. It is the intention of the Borough in setting up new NAFE courses at the college to attract young people who might otherwise finish their education at 16 with inadequate formal qualifications to meet the rising requirements of local employers.

EXISTING EDUCATIONAL PROVISION: SCHOOLS

9. Of the 22 secondary schools in the Borough 17 have a 6th form offering full-time one or two-year GCE and CSE courses to students wishing to take "A" level examinations, a mixture of "A" and "O" level or "O" level and CSE. Participation rates and staying-on rates are discussed more fully in paragraph 15 of this Appendix.

EXISTING EDUCATIONAL PROVISION: FURTHER EDUCATION COLLEGES

10. There are 3 colleges of non-advanced further education:-

Capel Manor Institute of Horticulture and Field Studies specialises in vocational courses in horticulture, arboriculture and flower arranging. All the students are part-time with the majority on day release. Because of its specialist courses the Institute attracts on to its non-advanced part-time day recognised courses a high proportion of students from outside Enfield and the percentage of 16-18 year-olds attending is generally rather lower than for the other colleges. The institute also offers non-vocational evening courses, and provides a field studies service for schools.

11. Southgate Technical College is the largest of the 3 further education establishments and a fairly typical example of a mainstream technical further education college. The college provides non-advanced recognised vocational courses in engineering, fashion and distribution, and teaching as well as a wide range of courses leading to GCE "O" and "A" level examinations, adult education classes and English as a foreign

language. A slightly greater proportion of its students come from outside than from inside the Borough. Courses currently available at the third college, Edmonton, are described in paragraphs 28 and 29.

12. Theobalds Park College is a residential adult education college providing a range of short stay non-vocational courses. It is also used by commercial firms and the schools and colleges in the Borough as a centre for specialist residential courses which are arranged by the user in consultation with the college.

13. Middlesex Polytechnic for which the Borough shares responsibility with Barnet and Haringey is nearby and offers advanced further education courses.

PRESENT AND FUTURE DEMAND FOR COURSES

14. Apart from these considerations which may well alter markedly in a few years, other factors, such as changes in the pattern of provision in school 6th forms, or perhaps changes in the law related, for example, to day release, may affect future demand for non-advanced further education and adult education courses in the Borough. Nonetheless, it was desirable that at least a crude forecast of future demand should be prepared. This has been done on the basis of a division into two age groups, as it is assumed that the demand from 16-18 year-olds will be different to that for those aged around 19 and over.

a. 16-18 year olds

15. The initial destination of young people reaching statutory school leaving age in Enfield in 1976-7, and for comparison the national position, is shown in Figure 20. The staying-on rate at school is not only above the national average but also well above the comparatively high level observed in many other London Boroughs. The proportion entering full-time further education is unusually low: it is not clear whether this should be attributed to a genuinely high demand for sixth-form education at school or to a comparatively restricted range of opportunities for further education. Within the 55% employed, in 1977, at least three quarters of those not in full-time education were receiving no part-time day or evening further education.

DESTINATION OF YOUNG PEOPLE REACHING SCHOOL LEAVING AGE. 1976/77.

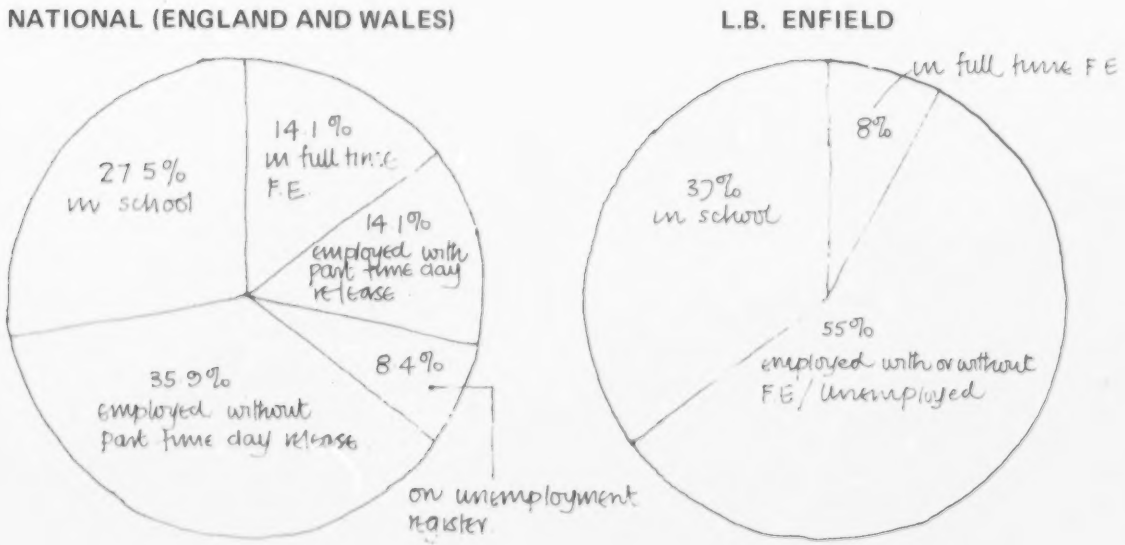

NATIONAL (ENGLAND AND WALES)
27.5% in school
14.1% in full time F.E.
14.1% employed with part time day release
35.9% employed without part time day release
8.4% on unemployment register
L.B. ENFIELD
8% in full time F.E
37% in school
55% employed with or without F.E / unemployed

Fig. 20.

Applications for enrolment at the college indicate a considerable demand for courses for this group which consisted of an estimated 5,200 to 5,600 16-18 year olds in 1977. It is expected to remain at or above that level until 1986 at least.

16. Using the present proportions in each group and the estimated change in the total number of 16-18 year olds, it is possible to predict an increase in student numbers to 1982 and then a gradual decline. Furthermore, it can be assumed that a proportion of the group at present receiving no education will, in the future, be attracted into the colleges. This is of great significance for Edmonton College for 2 reasons. Firstly, the greatest number of 16-18 year olds who leave full-time education are concentrated in the east of the Borough and will lie within the catchment area of the college as defined in paragraph 8. Secondly, it is the only college with land available for building.

b. **Adults: those aged 19 or over**

17. It has been estimated that in 1979 there were 13,100 adults in the Borough attending adult education courses and 2,670 attending FE colleges; and another 6,333 attending courses of both types at establishments outside the Borough. Together these represent about 13% of the age-group. It is supposed that those on further education courses are drawn mainly from the younger part of the age-group, which will expand over the next decade, while the number of older people, who are believed to provide most of the adult education students, declines.

APPENDIX 2

THE COLLEGE BEFORE EXPANSION

History

1. Edmonton College began as an annexe of Southgate Technical College which was opened in 1963 to take over low level work from Enfield College of Technology (now part of Middlesex Polytechnic). In 1967 the buildings on its main site were extended and the College took over the buildings of Montagu Secondary School which had closed in 1966. Because this was 5 miles from the main College site, it was developed as a semi-independent unit administered from Southgate but with its own Head of Department and staff.

2. It was proposed that the Montagu Annexe should accommodate 3 groups of courses:

i. one year EITB "off the job" craft and technician training in mechanical engineering;

ii. courses which were also available at Southgate, for students who would otherwise have to travel there or elsewhere to attend them;

iii. courses for which a demand was known to exist in the area but which had not previously been available, for example GCE 'O' level courses for mature students, commerce and audio typing courses.

By its second year of operation (1968-9) the Annexe was offering most of these and had also established some new courses which were vocationally rather than academically oriented and were related to the needs of the local community.

3. By 1975 the extension at Southgate was nearing completion and the future of the Annexe, now accommodating 319 full-time students (29% of the College total) and 520 part-time day and evening students (14% of the total), needed to be considered. The Annexe had further extended its range of courses, some of which were not available at Southgate, and it had developed strong links with the local community. After examination of the financial and educational implications the Council agreed in 1976 that the Montagu Annexe should from September 1977 become a separate College of Further Education.

4. Edmonton College, as it now became, assumed responsibility for adult education, which had previously been administered directly from the Education Office, throughout the Borough. With courses designed to suit the needs of the local community it was the most suitable of the Borough's three FE Colleges for this purpose.

5. The catchment area of the college consists broadly of the eastern part of the Borough as far west as the Great Cambridge Road, its southern fringe and some adjacent areas of Haringey and Waltham Forest. It has a high density of population: two-thirds of the economically active residents are employed in the Borough, many of them in skilled and unskilled manual work; there are 4 industrial estates within a mile of the College, with 60 engineering firms, 16 furniture and wood construction firms and 22 others between them; and there is a comparatively high immigrant population. (It would be difficult to extend the catchment area much, as most of the students who attend the College already come from those parts of the Borough from which access by public transport is easiest).

Courses at the College

6. The majority of the courses provided by the other FE colleges in the Borough (see Appendix 1, paras 10-13) and also by those immediately outside it, offer a vocational qualification relevant to skilled or professional occupations, or eventual entry to higher education. Edmonton on the other hand hopes to build on the success of its courses for the large number of young people, many of whom at present receive no further education, for whom

such courses are not appropriate. Many of these will have left school with few or no formal qualifications; some, indeed, will require further basic education. There is thus a need for a range of full-time or part-time courses at a standard below 'O' level or its equivalent, which have no entry qualifications and are designed to provide for employers of semi-skilled and unskilled manual and non-manual labour a pool of potential recruits who have either undergone some basic vocational training or whose basic educational attainments are now such that they can be trained without too much difficulty. They would also provide for young people who left school without acquiring skills which they now wish to attain, for example in part-time day or evening courses not at present available elsewhere in the Borough.

7. By 1978-9 the College was offering a wide range of further education courses in engineering; general education consisting mainly of full and part-time GCE courses; nursery nursing and social welfare; and commerce and office practice.

APPENDIX 3

CALCULATIONS OF TEACHING AREA CAPACITY IN THE EXISTING BUILDINGS

	Cols 1	2	3	4	5	6
	LOCATION	CATEGORY	TYPE	AREA (m^2 nett)	AREA STANDARD m^2/wk station	CAPACITY (work stations)
PERMANENT	Block 1 (3–storey)	General	Classrooms	125	2.3	54
		Specialist	Typing, Lang Lab	439	3.2	137
			Chemistry Lab	60	4.6	13
			Art Room	60	5.6	11
		Workshop	Large scale work	269	8.4	32
	Block 2 (single storey)	General	Classrooms	104	2.3	45
		Specialist	Biology Lab	53	4.6	12
			SUB–TOTALS	1110		304
TEMPORARY	Block 3	General	Classrooms	317	2.3	138
	Block 8	Workshop	Small Scale Work	87	5.6	16
	Block 7	Workshop	" " "	116	5.6	21
	Block 6	Workshop	" " "	116	5.6	21
			SUB–TOTALS	636		196
			GRAND TOTALS	1746		500

Col. 1. See Figure 3.

2.) 3.) Category and type based on present use.

4. Measured useable teaching area (excludes circulation, storage etc).

5. As described in "Notes on procedure for the approval of FE projects", 1972.

6. Column 4 divided by column 5.

APPENDIX 4

(a) TEACHING AREAS

800 FTE

COURSES	FTE	SECTION	TEACHING ACCOMM)DATION	HOURS/ WEEK	WORK STATIONS	m^2/W.S.	NET TEACHING AREA Gen	Spec	Wk/shop	STORAGE SERVICE	BALANCE m^2	GROSS TEACHING AREA Gen	Spec	Wk Shop	Total
Secretarial	160	Commerce	General	18	190	2.0	380			–	152	532			
Office Studies	110		Specialist	12	126	3.2		403		60	185		648		
Specialist Vocational Eng	80	Engineering	General	4	22	2.0	44			–	18	62			
			Specialist	10	55	5.0		275		55	132		462		
Non-Spec Voc Eng	60		Workshop	16	87	8.0			696	174	218			1088	
'O' Level Sciences	70	Gen Educ	General	18	176	2.0	352			–	141	493			
'O' Level Arts	90		Specialist	12	117	4.0		468		70	215		753		
Foundation/remedial	90														
Caring	130	Social Wk	General	18	98	2.0	196			–	78	274			
Social Wk/Home Help	10		Specialist	12	66	4.0		264		53	127		444		
TOTALS	800				936		972	1410	696	412	1266	1361	2307	1088	4756

(b) NON–TEACHING AREAS

800 FTE

	ACCOMMODATION TYPE	NET AREA m^2	BALANCE m^2	GROSS AREA m^2
	Library	414	114	528
	Admin	300	150	450
	Ac Staff WR	288	144	432
	Non Ac St WR	160	64	224
	Communal	800	240	1040
	Catering	400	100	500
	TOTAL	2362	812	3174

CALCULATED ACCOMMODATION REQUIREMENTS FOR 800 FTE

(a) In deriving work stations and gross teaching and non-teaching areas "NAFE Notes on Procedure" 1972 have been used as a guide, but have not been rigidly adhered to. In the light of experience an overall utilization factor of 64% (say 80% frequency and 80% occupancy) has been assumed in the calculation of work stations. General teaching and specialist space standards have been marginally adjusted in anticipation of a flexible design solution.

(b) The basic communal allowance for 800 FTE students of 740m^2 has been supplemented by 60m^2 to take some account of the preponderance of full-time students. The space standards adopted for catering originate from discussions between the Department's Catering Adviser and the working group.

APPENDIX 5

AREA ALLOCATIONS FOR 800 FTE STUDENTS AT THE END OF PHASE 1 EXPANSION

TEACHING AREA (gross m^2)

	Existing accommodation (refer to Fig 1) used as proposed.								New Accmmdtn	Existing + New Accmmdtn	Calcultd Reqmnts as Appendix 4
	Block 1	Block 2	Block 3	Block 6	Block 7	Block 8	Block 9	TOTAL	TOTAL	TOTAL	TOTAL
General	1073	–	325	–	–	–	–	1398	608	2006[2]	1361
Specialist	–	–	–	122	–	–	258	380	1845	2225	2307
Workshop	484	–	–	–	129	91	–	704	–	704[1]	1088
							TOTALS	2482	2453	4935	4756

NON TEACHING AREA (gross m^2)

Library	–	–	–	–	–	–	–	–	528	528	528
Administration	–	–	–	–	–	–	–	–	450	450	450
Academic staff workrooms	259	–	–	–	–	–	–	259	208	467	432
Non Academic staff workrooms	184	–	–	–	8	–	–	192	65	257	224
Communal	–	750	–	–	–	–	–	750	321	1071	1040
Catering	–	–	–	–	–	–	–	–	500	500	500
							TOTALS	1201	2072	3273	3174

Ref. 1.

The decision not to expand engineering workshops significantly (see paragraph 36b) accounts for the shortfall in workshop accommodation. Similarly, the decision to house light practical engineering activities in the existing Refectory does not meet the total area requirement. If pressure of demand increases in the engineering section these deficiencies could be remedied by building workshop accommodation in a future phase.

Ref. 2.

Because of the decision to house classrooms in existing accommodation (which are generally larger than the anticipated group sizes), there is likely to be a shortfall in the number of classrooms. To help alleviate this problem, and to make allowances for the uncertainties in enrolment projections an additional $645m^2$ (gross) has been allocated to the general teaching area requirement in Appendix 4.